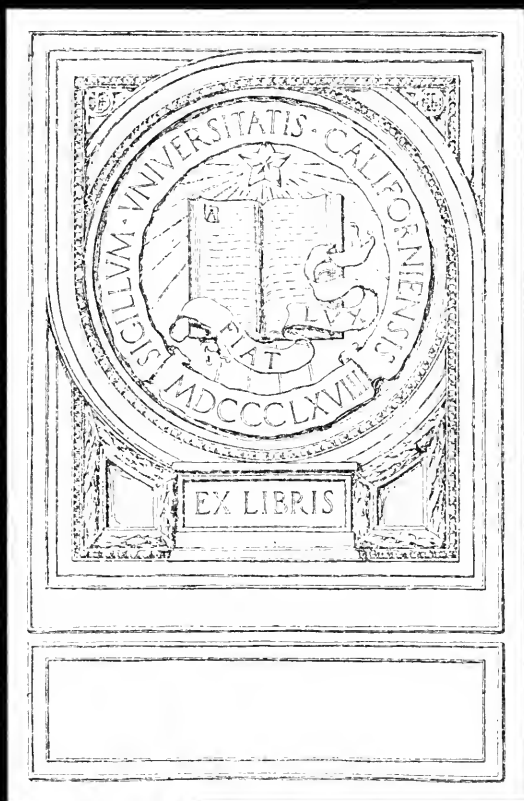


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# STATE RESEARCH

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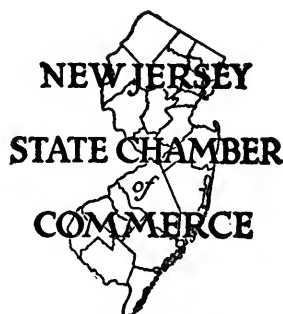
### Reorganization of the New Jersey Teachers' Pension and Retirement Systems

Report of the  
Pension and Retirement Fund Commission  
of the State of New Jersey

GIFT  
APR 6 1923

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BUREAU OF STATE RESEARCH  
CLINTON BUILDING, NEWARK

**Joint Resolution No. 3, Laws of 1918**

## 142d Session of the Legislature of the State of New Jersey

Approved February 23, 1918

*Joint Resolution for the Appointment of a Commission to Investigate the Subject of Municipal, County and State Pensions, and the Teachers' Retirement Fund and the Teachers' Thirty-five Year Half Pay Pension Fund.*

BE IT RESOLVED by the Senate and General Assembly of the State of New Jersey:

1. That a commission of five members be appointed, two by the President of the Senate and three by the Speaker of the House, to be known as "The Pension and Retirement Fund Commission," to make a survey of the subject of pensions and retirement funds for the employees of the various municipal, county and State governments and the school teachers and school employees of the State, and to report its findings to the present or a future session of the Legislature, together with such recommendations as it may deem best regarding pensions and retirement funds.
2. Said commission shall have power to examine witnesses, to call for any books, records, memoranda or other material, and for such purposes is hereby given authority to issue subpoenas for the presence of any person or persons or the production of such books, records, memoranda or other material.
3. The Commission shall sit during the session of the present Legislature, and after adjournment thereof at such time and place as the majority may decide and shall serve without pay, but shall have authority to engage such assistants as may be deemed wise for the prosecution of their investigation, and to defray the expenses shall use such moneys or any portion thereof as may be appropriated in any supplemental or annual appropriation bill.
4. This joint resolution shall take effect immediately.

## The Commission

*Chairman*

ASSEMBLYMAN ARTHUR N. PIERSON, Union

SENATOR WILLIAM E. FLORANCE, Middlesex

ASSEMBLYMAN RALPH N. KELLAM, Camden

SENATOR WILLIAM B. MACKAY, Bergen

*Secretary*

ASSEMBLYMAN EDWARD P. STOUT, Hudson

NEW JERSEY  
STATE CHAMBER  
OF COMMERCE

BUREAU OF STATE RESEARCH

EXECUTIVE OFFICE  
CLINTON BUILDING, NEWARK  
TEL. MARKET 107

NOVEMBER 1, 1918.

*To the Pension and Retirement Fund Commissioners  
of the State of New Jersey.*

When the Pension and Retirement Fund Commission was created by the Legislature of 1917 it asked the Bureau of State Research to assist it in collecting data and performing all the technical part of the investigation, in view of the fact that the Bureau of State Research had all the necessary research facilities and a staff of investigators who have been specially trained in this field of work through their previous participation in a similar investigation of pension funds.

The data which the Bureau of State Research collected and submitted to the Commission last year clearly showed that all the existing pension funds in New Jersey are financially unsound and that the chaotic condition of pension systems is inimical to public interest.

Basing its report on the information collected the Commission asked the Legislature to authorize a further detailed investigation with a view to reorganize the existing systems on a sound financial and administrative basis.

The new Commission appointed in 1918 directed the Bureau of State Research to continue to perform the technical part of the investigation. In accordance with the instructions of the Commission, the Bureau of State Research has taken a census of all the teachers, policemen and firemen in the state and has prepared estimates of cost of the existing systems and of the plan of reorganization.

The Bureau of State Research has endeavored to conduct the work without bias and in a thoroughly scientific way and now respectfully submits to the Commission all the data which it has collected and prepared.

Respectfully,



*Secretary.*



*Associate Director.*

PENSION AND RETIREMENT FUND COMMISSION

142D SESSION OF THE LEGISLATURE OF THE STATE OF NEW JERSEY

J. R. 3. LAWS OF 1918

*Chairman*

ASSEMBLYMAN ARTHUR N. PIERSON, UNION

SENATOR WILLIAM E. FLORANCE, MIDDLESEX

ASSEMBLYMAN RALPH N. KELLAM, CAMDEN

SENATOR WILLIAM B. MACKAY, BERGEN

*Secretary*

ASSEMBLYMAN EDWARD P. STOUT, HUDSON

OFFICE OF THE COMMISSION  
BUREAU OF STATE RESEARCH  
OF THE  
NEW JERSEY STATE CHAMBER OF COMMERCE  
CLINTON BUILDING, NEWARK

January 14, 1919.

*To the Senate and General Assembly  
of the State of New Jersey:*

The Pension and Retirement Fund Commission appointed by the Legislature under the Joint Resolution No. 3, Laws of 1918, "To Investigate the Subject of Municipal, County and State Pensions and the Teachers' Retirement Fund and the Teachers' 35 Year Half Pay Pension Fund," submits the following report on its investigation of the Teachers' Retirement Fund and the Teachers' 35 Year Half Pay Pension.

Of the members of the Commission, the Chairman and Senators Mackay and Florance were members of the previous Pension and Retirement Fund Commission which conducted the preliminary investigation during 1917. Assemblyman Stout was elected to act as Secretary of the Commission. On the death of Assemblyman Litchfield, which occurred before the Commission began its work, Assemblyman Kellam was appointed to fill the vacancy.

Considerable data regarding the teachers' retirement situation in this state has been obtained by trained investigators and by means of public hearings, and with this data in hand the Commission has made a thorough study of the subject.

The critical and constructive conclusions reached are presented in the first part of this report. The analysis of the bill which the Commission has prepared providing for the reorganization of the existing teachers' pension system is submitted in the second part. The actuarial estimate of the cost of the existing systems and of the proposed plan is given in part three.

The Commission has been greatly assisted by the Bureau of State Research which has conducted the investigative and actuarial work under the direction of Paul Studensky, Supervisor of the Pension Staff, and George B. Buck, Actuary.

ASSEMBLYMAN ARTHUR N. PIERSON, Chairman

SENATOR WILLIAM E. FLORANCE

ASSEMBLYMAN RALPH N. KELLAM

SENATOR WILLIAM B. MACKAY

ASSEMBLYMAN EDWARD P. STOUT, Secretary



## PART I

# Present Systems and Their Reorganization

## A critical and constructive study

Two years of investigation. *Existing Styles and need for a merger.* Condition of Retirement Fund. Condition of State Pension. Cost and unsoundness of double benefits. Summary of present situation. *New System.* Underlying Principles. Provisions. Teachers' contributions. State's contributions compared with teachers'. *Suggestions from teachers.* Summary, *Illustrative cases.* Comparison with present benefits. Amount of allowance for new entrants at different ages of retirement. Amount of Allowance to teachers having previous service. Amount of contributions accumulated at 4% interest after certain period of years. Reserves for certain allowances at certain ages. Refunds. *Valuation of State's liabilities.*

*Two years of investigation.* During the first year of its investigation the Pension and Retirement Fund Commission made only a very general survey of the two retirement systems for teachers—the Retirement Fund which is supported by membership dues and provides an annuity of 60% of salary (minimum \$250, maximum \$650) on disability after 20 or more years of service, and the 35-year Service Pension which is supported entirely by the State and provides a pension of half-pay after 35 or more years of service. The Commission postponed making any definite proposals of legislative changes until after it could make a more thoroughgoing investigation.

Having received during the second year the funds necessary for such an investigation, the Commission undertook to ascertain as carefully as possible all the facts regarding the obligations of the two systems. With that purpose in view it took a census of all the teachers in the State and had on the basis of that census an actuarial valuation of the liabilities of these systems made.

### *Existing Systems and Need For a Merger*

*Condition of Retirement Fund.* The actuarial report which is appended hereto shows that the financial condition of the Teachers' Retirement Fund is briefly as follows:

Obligations towards present annuitants and present active teachers.....	\$19,061,000
Assets which the Fund will realize from present capital and from prospective contributions of present active teachers....	4,239,000
Deficit .....	\$14,822,000

The deficiency of almost \$15,000,000 is the result of the inadequacy of the rates of contributions charged by the Fund, especially in the case of the older teachers, who joined it during the first ten years of its operation, to pay the benefits promised. The total assets now on hand cover only 18% of the liabilities on account of present annuitants (capital of \$485,000 as against liabilities of \$2,631,000). The total assets receivable in the future from present active members cover only 23% of the liabilities on account of their future annuities (prospective assets of \$3,754,000 as against liabilities of \$16,400,000). This means, on the present basis, that if the present annuitants shall re-

ceive more than 18% of their present benefits, the future annuitants among the present active members shall receive less than 23% of the promised rate of benefits.

To maintain the present rate of benefits, cover the immense deficiency and put the Fund on a solvent basis so far as its future operation is concerned, it would be necessary to increase the contributions of the members to approximately 9% of salary if the deficiency is to be liquidated in 25 to 30 years or 8% or 7% if it should be spread over a longer period, as may be seen from the following table:

Normal contributions for future services of present members graduated for either sex according to age, and averaging .....	4% of salaries
Deficiency contribution on account of prior service of present active members to be paid approximately for 25 to 30 years.....	3% of salaries
Deficiency contribution on account of present annuitants .....	2% of salaries
Total.....	9% of salary

decreasing in the course of 25 to 30 years to 7%, after which it would drop to approximately 4%.

It appeared to the Commission that an assessment of 7, 8 or 9 per cent. on the salaries of all the members of the Fund would be far greater than the members could bear and, furthermore, that it could hardly be equitable as between younger and older teachers if compared with the benefits they would receive. Whereas many of the older teachers who joined the Fund between 1896 and 1907 would receive as much as forty times the amount they have contributed, the younger members who would contribute the higher rates for 20, 30 or 40 years would eventually receive much less than the amount they have contributed could purchase. Still others who would withdraw from the service through resignation or dismissal and the dependents of those who would die before retirement would receive for all their rather considerable payments no benefits whatever. The Fund could not insure the fulfillment of all its promises by increasing the contributions to a rate which would be equitable and not too burdensome to its members.

*Condition of State Pension.* The Commission had two actuarial valuations made of the 35-year Service Half Pay Pension System: one based upon an assumed age distribution and taken as of June 30, 1917, and the other based upon the actual age distribution obtained by the census which the Commission has taken, and brought to June 30, 1918. The results of the two valuations differ only slightly. The obligations of the System with respect to both present pensioners and prospective beneficiaries among the present force amount to \$23,129,000. These obligations would on the present basis be met by annual appropriations which would increase from year to year at a more rapid rate than the payroll. They would eventually amount to more than 10% of the payroll and become exceedingly burdensome. To place the system on a reserve basis and thus distribute the burdens more evenly as between the present and the future, it would be necessary for the State to contribute annually from now on an amount equal to about 8% of the total payroll, as shown below:

Normal contribution, for future services of present active members..	3½ % of salaries
Deficiency contributions for prior services of present active members, to be paid for approximately 25 years .....	3 % of salaries
Deficiency contribution on account of present pensions.....	1½ % of salaries
Total.....	8 % of salary

As the State now appropriates on account of present pension roll only approximately 1½ % of the payroll (about \$230,000) it would have to increase the appropriation to about five times that rate, i. e., to over a million dollars. That this would impose a considerable burden upon the State is evident. It would seem hardly fair that the State should bear it, especially considering that only a portion of the teachers would enjoy its benefit and that according to all sound standards the beneficiaries should participate in the cost of their pension.

*Cost and unsoundness of double benefits.* It has been shown that the majority of the teachers now retiring receive double benefits ranging between 70% and 110% and even more of their salaries and averaging 103%.<sup>1</sup> The maintenance of the present double system and double benefits for present teachers would cost more than \$42,000,000 (\$23,129,000 for the 35-year Half Pay Pension, and \$19,961,000 for the Retirement Fund Annuity), towards which the teachers would contribute at the present rate only about

<sup>1</sup> The analysis of the retired teachers' roll shows that 363 retired teachers receive double benefits, 225 receive the annuity only and 54 receive the pension only. The facts about those receiving double benefits are as follows:

189 teachers are enjoying benefits of 110% of salary and more.  
86 teachers are enjoying benefits of 100% to 110% of salary.  
78 teachers are enjoying benefits of 75% to 100% of salary.  
10 teachers are enjoying benefits of 70% to 75% of salary.

363 teachers are enjoying benefits averaging 103% of salary (\$1,083 as against average salaries of \$1,054).

\$4,500,000 (including the present capital of the Fund of \$500,000). The annual cost would approximately equal 16% of the payroll, of which the teachers would contribute on the present basis only about 2%. For the present it would amount to more than \$2,000,000 annually, of which the teachers would now contribute only about \$260,000.

It is evident that the State could not supply the tremendous difference between the contributions of the teachers and the cost of the double benefits. Furthermore, it would be against the economic interests of the majority of the teachers if it should, because the \$42,000,000 would supply only two kinds of benefits—the double superannuation benefit (pension and annuity) after 35 years of service, and the strictly disability benefit (the annuity) between 20 and 35 years. Nothing will go to the dependents of the teachers who die. Nothing to those who resign or are dismissed before retirement and who have contributed for a number of years. Nothing to those who become disabled before 20 years of service: approximately one-fourth of the present teachers will receive double benefits, one-eighth will retire on one or the other benefit only, and two-thirds will receive no benefit whatsoever—most of them not even protection for disability as they would withdraw from the service before the time when under the present system disability protection begins.<sup>2</sup>

The double benefits amounting to full salary or more and the inequitableness of the system would unfavorably affect the school system. Teachers who can by retiring receive the same or even greater allowance than the salary they are receiving would have no incentive to continue teaching. Efficient teachers would seek to retire before they become superannuated. Incapacitated teachers would postpone retirement until they could qualify for both benefits. Inefficient and not incapacitated teachers who have completed 20, 25 or 30 years of service would neither resign nor be dismissed because this would entail for them a forfeiture of all their contributions. These tendencies are already apparent. Both for the teachers and for the State the situation would become unbearable.

*Summary of present situation.* To summarize the present situation:

1. The Retirement Fund will be unable to fulfill its present promises and cannot be supported on a solvent basis by the contributions of its members.
2. The 35 years Service Pension is too burdensome for the State to maintain without contributions from teachers.
3. There is no principle justifying the double benefits amounting to full salary or more; they are inequitable and economically and administratively unsound.

All these considerations have convinced the Commission that the present two systems should no longer continue to operate separately; that there is no justification for maintaining the double benefits; and that some plan for the merger of the two systems and for a more equitable distribution of benefits must be devised.

<sup>2</sup> Disability benefits under the Retirement Fund are paid only after 20 years of service.



## New System

*Principles underlying new system.* In framing the provisions of a new retirement system into which the two existing systems should merge the Commission was guided by the following three principles, upon which all sound retirement systems are founded:

1. The system should be established on a reserve basis, i. e., each year throughout the service of each member a contribution should be set aside which shall accumulate together with interest a reserve which shall be sufficient on an average to pay the retiring member the benefit promised to the end of his or her life.
2. The system should be supported by joint contributions of the members and of the employer (in this case, the State) and jointly administered by them because there is a mutual interest between the employees and the employer in retirement provisions, the former seeking protection for themselves and for their dependents against want in their old age, in case of disability or death and to some extent in case of resignation or dismissal, and the latter endeavoring to secure a higher efficiency of service by eliminating deadwood from the service, and replacing them by younger and more efficient forces and attracting to the service a better type of employee and promoting the esprit de corps of the personnel; and
3. Any member who withdraws from the service through resignation or dismissal before retirement and the estate of any member who dies before retirement should receive all the contributions he or she had paid, together with interest; each member's contributions should be credited to his or her account and should be carried until retirement in a similar way as deposits in a savings bank.

The Commission endeavored to make the provisions of the proposed system as liberal as possible within certain limitations of cost, and the system as equitable and elastic as a sound retirement system can be.

The Commission also endeavored to make the transition from the old system to the new system as gradual as conditions would permit and reduce as far as possible the hardships which in any process of transition might occur in individual cases.

*Provisions of new system.* The provisions of the proposed system are outlined in detail in the statement on pages 13 to 17. They may be briefly summarized as follows:

A new fund called the New Jersey Teachers' Pension and Retirement Fund is to be created. The feature of the Teachers' Retirement Fund compelling all new appointees to be members of that fund is to be repealed. Hereafter all new appointees shall be compelled to become members of the new fund. For present teachers membership in the new fund shall be optional. Those who are members of the Retirement Fund may if they wish transfer to the new fund.

The new fund is to be administered by a board in which the teachers and the State shall be equally represented. Retirement shall be optional at the age of 62 and compulsory at 70. The amount of allowance is

approximately equal to 1/70th of the average salary of the 5 years preceding retirement, for each year of service.<sup>1</sup> There is no maximum limit on the amount of the allowance. The latter may exceed half pay in case of service above 35 years. In no case shall the superannuation allowance be less than \$400. Credit is allowed for service rendered in the public schools in other States up to a maximum of 10 years.

A disability allowance is provided after 10 or more years of service and is fixed at the same 1/70th rate as the superannuation allowance, except that it cannot be less than 30% of salary or \$300, whichever shall be larger, and on the other hand cannot exceed 9/10 of the amount of allowance to which the teacher would have been entitled had he stayed in the service until 62.

In case of resignation or dismissal from the service before retirement the member shall receive all his contributions together with interest at 3%. In case of death before retirement, the estate of the member shall receive the contributions of the member together with interest at 3%.

At the time of retirement any teacher may exercise his option as to the form in which he would like to take his benefits. He may convert the reserve into a smaller annual payment with the proviso that after his death the balance shall be paid in a lump sum or in the form of an annuity to any person which he may designate.

Any teacher who transfers from the Teachers' Retirement Fund to the new fund shall be credited in the latter with the amount which he contributed to the former fund and shall receive at retirement such an annuity as this amount will purchase. This annuity is additional to any other benefit received under the new act.

The payment of the existing pensions granted under the 35-year Service Act shall be continued as heretofore. In case the annuities received from the Retirement Fund by any teacher now on the retired list who does not receive the pension, shall be reduced because of the inability of the Fund to pay full annuities, the State will supply the difference between the reduced annuity and the one which the teacher received heretofore.

*Teachers' Contributions.* The teachers will contribute half of the cost of the benefits for all services rendered after the establishment of the new system.

<sup>1</sup> The retirement allowance for future service consists of two elements: a "pension" provided by the state amounting to 1/140th of the salary for each year of service, and an "annuity" provided by the teacher's own contributions which in the case of average advancement of salary will be equal to the "pension." Together the two benefits will make up the 1/70th fraction of salary for each year of service. However, in case the teacher advanced during the later period of his career, at a more rapid rate than the average, his contributions made at the average rate of salary will not be sufficient to provide an annuity bearing the 1/140th per year of service ratio to his larger salary. The total allowance will, therefore, be somewhat less than 1/70th of salary multiplied by years of service. On the other hand, if the teacher advanced at a slower rate than the average his contributions will provide an annuity bearing a larger ratio to his salary. In this way the teachers who advance at a slower rate than the average will not be taxed to pay the annuities of the teachers who advance at a more rapid rate than the average.

The other half will be supplied by the State. They need not contribute on account of benefits for prior service. The State will contribute its own as well as the teachers' part for all the prior years. It will thus place the teacher in the same position as if the State and the teacher contributed on his or her account at a proper rate from the time the teacher entered the service and up to the present date. Contributions of the teachers are fixed according to age at the time they enter the new fund and vary for men between  $3\frac{1}{2}\%$  and 6% of salary, and for women between  $3\frac{1}{2}\%$  and 7% of salary.

A teacher who enters the system at an earlier age has a longer period within which to contribute his share of the cost of his prospective benefit than a teacher who enters the service at a later age. The latter must therefore pay a higher rate of contribution towards the same benefit than the former.

**Rates of Contribution Required of Teachers Under Proposed Plan. Retirement Age 62.**

Allowance  $1/70$  of the average salary of the five years immediately preceding retirement, multiplied by the number of years of service.

AGE At Entrance Into the New Fund	MEN (Percentage of Salary)	WOMEN (Percentage of Salary)
20	3.60	3.91
21	3.60	3.93
22	3.60	3.95
23	3.61	3.98
24	3.62	4.01
25	3.62	4.05
26	3.64	4.09
27	3.66	4.13
28	3.69	4.18
29	3.72	4.25
30	3.76	4.32
31	3.78	4.39
32	3.84	4.46
33	3.89	4.53
34	3.93	4.60
35	3.97	4.68
36	4.01	4.75
37	4.07	4.84
38	4.13	4.94
39	4.19	5.04
40	4.26	5.13
41	4.33	5.22
42	4.40	5.32
43	4.47	5.42
44	4.54	5.53
45	4.61	5.63
46	4.68	5.73
47	4.76	5.83
48	4.84	5.93
49	4.92	6.04
50	5.01	6.16
51	5.10	6.27
52	5.19	6.38
53	5.28	6.49
54	5.37	6.60
55	5.46	6.71
56	5.56	6.83
57	5.67	6.94
58	5.78	7.05
59	5.89	7.17
60	6.00	7.29

Experience shows that women teachers must contribute at a higher rate than men, because they live longer after retirement than the latter. The average life time of women teachers retiring at age 62 is 15.27 years, whereas the average life time of men teachers

retiring at the same age is only 11.84 years. It costs \$10,760 to provide a retirement allowance of \$1,000 to a woman teacher retiring at that age, and only \$8,770, or about \$2,000 less, to provide the same allowance to men teachers retiring at the same age. To meet its share of the higher cost of benefits of the women teachers, the State must contribute in their case at a higher rate than in case of the men.

While the contributions required in case of entrants at higher ages may seem high (6% and 7%), it must be noted that they will be paid only for a few years, as all contributions cease at 62 years of age. Once the rate of contribution of a teacher has been fixed it remains at that rate throughout the entire period of his service, except that it may be slightly increased or reduced if at any subsequent actuarial valuation a higher or lower rate of mortality is obtained than the one originally adopted.

*Contributions of State as compared with those of teachers.* In case of new entrants, i. e., teachers appointed after the establishment of the new system, the State will contribute at such a rate as to match the benefit which the teachers' own contributions will provide.

**Rates of Contributions to Be Paid by the State Under the Proposed Plan of Reorganization, to Meet Half of the Cost of the Retirement Allowances to New Entrants and For Future Services of Present Teachers.**

NOTE: The rate is lower than that required of the teachers. This is due to the fact that the number of teachers who would leave the service before retirement, is discounted in the case of the State's contribution (i. e., the State does not contribute on their account).

In addition to these contributions the State must contribute on account of the total cost of allowances for past services and all outstanding pensions as shown on page 9 of this report.

AGE At Entrance Into the New Fund	MEN (Percentage of Salary)	WOMEN (Percentage of Salary)
20	1.97	2.15
21	1.99	2.23
22	2.01	2.32
23	2.03	2.41
24	2.05	2.51
25	2.08	2.62
26	2.11	2.75
27	2.14	2.88
28	2.18	3.02
29	2.22	3.15
30	2.26	3.27
31	2.30	3.36
32	2.34	3.44
33	2.39	3.52
34	2.44	3.60
35	2.49	3.67
36	2.52	3.71
37	2.54	3.73
38	2.56	3.75
39	2.58	3.76
40	2.63	3.77
41	2.70	3.78
42	2.79	3.79
43	2.88	3.81
44	2.98	3.83
45	3.08	3.85

In case of present teachers the State will contribute much more than the teachers. Whereas the greater part of the teachers' contributions averaging about  $4\frac{1}{2}\%$  will eventually revert to them together with interest, as the majority will leave the service before

retirement, no part of the State's contributions, amounting to about 7% of salaries, will revert to it:

Normal contribution on account of benefits for future services of present teachers, averaging.....	2½% of salaries
Deficiency contributions on account of benefits for prior services of present teachers, approximately.	3% of salaries
Contributions on account of present pension roll .....	1½% of salaries

Total..... 7% of salary  
besides cost of administration, additional benefits, cost of minimum benefit provision, and guarantee in case of a deficiency.

The difference in the proportion of cost borne by present teachers and by the State on their account may well be shown by the fact that whereas the present teachers will contribute on account of their superannuation and disability benefits approximately \$6,300,000, the State will contribute on that account approximately \$21,600,000, i. e., more than 75% of the cost. All teachers' contributions above \$6,300,000 will be merely savings accounts. They will be contributed and drawn out with interest by those teachers or by their dependents, who eventually resign, are dismissed or die before retirement. Thus every member of the force will to a greater or lesser extent become a beneficiary of the system. This feature vitally differs from the present tontine arrangement which has been discussed on page 8.

The contributions as between different benefits provided are distributed as follows:

*Teachers' Contributions*

Superannuation Allowances .....	\$ 5,257,261
Disability Allowances .....	1,039,692
Total Teachers' Contributions.....	\$ 6,296,953

*State's Contributions*

Superannuation Allowances:	
Now Outstanding .....	\$ 2,140,849
For Prior Service.....	8,167,627
For Future Service.....	5,257,261
Total for Superannuation.....	\$15,565,735
Disability Allowances .....	5,016,093
Disability Pension to guarantee present annuities of those who receive the annuity only .....	689,508
Additional Annuities in compensation of contribution to Retirement Fund.....	314,649
Total State's Contributions.....	\$21,585,987

The foregoing figures, including rates of state's contributions on page 8, have been computed on the basis of the original plan of the Commission. Since then many new features were incorporated in the bill (such as the computation of allowances on the basis of last 5 instead of 10 years, the increase of disability allowances to the 1/70th rate and the minimum benefit provisions) which will still further increase the difference between the cost to the state and the cost to the present teachers.

The transition from an almost gratuitous to a contributory pension under the proposed system is a gradual one. Whereas a teacher who is now 62 years of age and had 35 or 40 years of service to his credit will receive his allowance of 35/70ths or 40/70ths of salary

entirely at the expense of the State, and only a small additional annuity at his own expense (i. e., for the few hundred dollars he has contributed to the old fund), the teachers retiring 5, 10 or 20 years hence will have contributed a noticeable share of the cost of their benefits. Finally those retiring 30, 40 or 50 years from now will have contributed one-half of the cost of their superannuation or disability benefits. Thus in the course of about fifty years the system will reach the truly "fifty-fifty" basis.

*Suggestions From Teachers*

Taking the view that the teachers' retirement question vitally affects the teachers as well as the schools and the public at large, the Commission endeavored to give a wide publicity to its findings and proposals, to carefully examine all criticisms which the latter might evoke and to incorporate in its proposals any sound suggestions that might have been advanced.

Many teachers have urged that retirement on half pay should be allowed before 62 years of age. The Commission has, therefore, increased the disability benefit from 1/75th of salary per each year of service to 1/70th (although this feature is open to abuse). Thus a teacher who entered the service at 22 or 23 and has completed 35 years of service at 57 or 58 years of age and who is no longer capable to teach efficiently, can upon proper proof of such incapacity retire on 35/70ths of her salary, i. e., on half pay. It would be possible also to reduce the age for optional retirement to 60, but this would naturally increase both the teacher's and the State's rates of contributions as compared with the rates required for retirement at 62. The rates for the lower age are now being calculated by the actuary of the Commission and will be published in a special pamphlet, as soon as the calculations are completed. The teachers and the State will then be in a better position to discuss this question.

Another demand advanced by some teachers was that the retirement allowance should be computed on the average salary of last 5 years rather than on the average of last 10 years, as originally intended by the Commission. Although the latter affords a more stable basis for the financing of the system, and is more equitable than the 5 year basis, the Commission decided to change to the latter basis in order that the pension of some of the teachers about to retire should not be smaller than the one provided on that basis under the 35-year Half-pay Pension Law.

The third important feature urged by some teachers and thereupon adopted by the Commission was that outside experience should be credited up to a maximum of 10 years. The cost of the additional benefit for that experience would be supplied entirely by the State, so far as present teachers are concerned.

The new entrants desiring credit for their outside experience not exceeding 10 years must cover half of the cost of the benefit on that account, the State supplying the other half. A teacher coming from Massachusetts, Connecticut, Pennsylvania or New York City will bring with him to the New Jersey fund the contributions which the systems of the latter States or cities refunded to him when he withdrew from the service. Little or nothing would have to be contributed in addi-

tion. On the other hand a teacher coming from a State which has no retirement system or does not allow refunds on withdrawal, or a teacher who did not become a member of the retirement system in the other State, will be charged a somewhat higher rate of contribution for outside experience if he wishes to get credit for it.

Finally the fourth point brought to the attention of the Commission and favorably acted upon was that a minimum amount of allowance be established. The \$400 minimum adopted for superannuation will assure all low-salaried teachers (those receiving less than \$800 per year) an allowance of more than half pay. The disability minimum of \$300 is \$50 larger than the one now provided by the Retirement Fund.

### Summary

The proposed plan is more liberal than the systems of Massachusetts and Connecticut, for it gives higher superannuation and disability benefits, gives credit for outside experience and imposes no maximum limit on the amount of the retirement allowance. It is more liberal than the system of New York City, for it computes the allowance on the average salary of last 5 instead of 10 years, proportionately increases the allowance beyond half pay in case of service above 35 years, and gives a higher disability benefit. It is more liberal than the system of Pennsylvania, for it calculates the superannuation allowance on the 1/70th instead of the 1/80th rate, gives credit for outside experience and greater disability benefits, and establishes a minimum amount of allowance.

Compared with the present system of New Jersey it offers the following advantages:

1. Greater assurance that all the benefits promised shall be paid.
2. Return of contributions with interest at 3% in case of resignation or dismissal.
3. Death benefits before retirement in the form of refunds with 3% interest.
4. Disability protection after 10 years instead of 20.
5. Equitable increase of retirement allowance with longer service.
6. Convertibility of the individual reserves into such life or death benefits as the member may at the time of his retirement select.
7. Greater equitableness and elasticity of benefits.

**Table 1—Amounts Which an Annual Contribution of \$25, \$35, \$50, \$75 or \$100 Deposited at 4% Interest Will Produce at the End of a Certain Period of Years.**

No. of Years	\$25	\$35	\$50	\$75	\$100
5	\$ 140.82	\$ 197.17	\$ 281.65	\$ 422.47	\$ 563.30
10	312.15	437.01	624.30	936.45	1,248.60
15	520.62	728.87	1,041.25	1,561.87	2,082.50
20	774.22	1,083.91	1,548.45	2,322.67	3,096.90
25	1,082.80	1,515.92	2,165.60	3,248.40	4,331.20
30	1,458.20	2,041.48	2,916.40	4,374.60	5,832.80
35	1,914.95	2,680.93	3,829.90	5,744.85	7,659.80
40	2,470.67	3,458.94	4,941.35	7,412.02	9,882.70

**Table 2—What an Annual Contribution of \$25, \$35, \$50, \$75 or \$100 Compounded Annually at 3% Interest Will Amount to After a Certain Period of Years.**

No. of Years	\$25	\$35	\$50	\$75	\$100
5	\$ 136.70	\$ 191.38	\$ 273.40	\$ 410.10	\$ 546.80
10	295.20	413.28	590.40	885.60	1,180.80
15	478.92	670.49	957.85	1,436.77	1,915.70
20	691.90	968.66	1,383.80	2,076.70	2,767.60
25	938.82	1,314.35	1,877.65	2,816.47	3,755.30
30	1,225.07	1,715.10	2,450.15	3,675.22	4,900.30
35	1,556.90	2,179.66	3,113.80	4,670.70	6,227.60
40	1,941.57	2,718.20	3,883.15	5,824.72	7,766.30

**Table 3—Comparison of the Superannuation and Disability Benefits of the Existing Systems and the Proposed Plan in Case of a Teacher Entering Service at 22 and Drawing an Average Salary of \$1,050 for the 5 Years Preceding Retirement.**

Age at which Benefit is paid	Proposed Retirement Plan (1/70th of salary for each year of service)	Teachers' Retirement Fund (60% of salary)	35-Year Service Pension (50% of salary)
22	Refund of contributions with interest; no disability benefits.	No benefit whatever.	No benefit whatever.
23			
24			
25			
26			
27			
28			
29			
30			
31			
32	Disability.	No benefit whatever.	No benefit whatever.
33			
34			
35			
36			
37			
38			
39			
40			
41			
42	Disability.	Disability.	Superannuation.
43			
44			
45			
46			
47			
48			
49			
50			
51			
52	Superannuation.	Disability.	Superannuation.
53			
54			
55			
56			
57			
58			
59			
60			
61			
62	Superannuation.	Disability.	Superannuation.
63			
64			
65			
66			
67			
68			
69			
70			

**Table 4—Approximate Amount of Retirement Allowance Which a New Entrant Would Receive on the Basis of 1/70th of the Average Salary of the 5 Years Preceding Retirement for Each Year of Service (\$14.28 Per Year) If His Salary Advanced During His Career at the Average Rate.**

Note.—The superannuation allowance is minimum \$400. The disability allowance is minimum \$300. The latter allowance can in no case exceed 9/10ths of the allowance which the teacher would have received had he continued until 62. The two lines indicate, one, the points at which the allowance exceeds half-pay; the other, the points at which it is above the minimum.

Age at Entrance into the New Fund	Disability Allowance on Retirement at Age:							Approximate Amount of Superannuation Allowance on Retirement at Age:						Age at Entrance into the New Fund
	55	56	57	58	59	60	61	62	63	64	65	66	67	
22	\$471	\$486	\$500	\$514	\$514	\$514	\$514	\$571	\$585	\$600	\$614	\$628	\$643	22
23	457	471	486	500	501	501	501	557	571	585	600	614	628	23
24	443	457	471	486	488	488	488	543	557	571	585	600	614	24
25	428	443	457	471	476	476	476	528	543	557	571	585	600	25
26	414	418	443	457	463	463	463	514	528	543	557	571	585	26
27	400	414	428	443	450	450	450	500	514	528	543	557	571	27
28	386	400	414	428	437	437	437	486	500	514	528	543	557	28
29	371	386	400	414	424	424	424	471	486	500	514	528	543	29
30	357	371	386	400	411	411	411	457	471	486	500	514	528	30
31	343	357	371	386	398	398	398	443	457	471	486	500	514	31
32	328	343	357	371	386	386	386	428	443	457	471	486	500	32
33	314	328	343	357	371	373	373	414	428	443	457	471	486	33
34	300	314	328	343	357	360	360	400	414	428	443	457	471	34
35	300	300	314	328	343	357	360	400	400	414	428	443	457	35
36	300	300	300	314	328	343	357	400	400	400	414	428	443	36
37	300	300	300	300	314	328	343	400	400	400	400	414	428	37
38	300	300	300	300	300	314	328	400	400	400	400	400	414	38
39	300	300	300	300	300	300	314	400	400	400	400	400	400	39
40	300	300	300	300	300	300	300	400	400	400	400	400	400	40
41	300	300	300	300	300	300	300	400	400	400	400	400	400	41
42	300	300	300	300	300	300	300	400	400	400	400	400	400	42
43	300	300	300	300	300	300	300	400	400	400	400	400	400	43
44	300	300	300	300	300	300	300	400	400	400	400	400	400	44
45	300	300	300	300	300	300	300	400	400	400	400	400	400	45
46	300	300	300	300	300	300	300	400	400	400	400	400	400	46
47	300	300	300	300	300	300	300	400	400	400	400	400	400	47
48	300	300	300	300	300	300	300	400	400	400	400	400	400	48
49	300	300	300	300	300	300	300	400	400	400	400	400	400	49
50	300	300	300	300	300	300	300	400	400	400	400	400	400	50

**Table 5—Contributions and Amount of Retirement Allowances of Teachers Having Previous Service to Their Credit and Retiring at 62 Years of Age.**

Age at Entrance into the Fund	Number of Years of Prior Service	Annual Contribution (Percentage of Salary)		Average Salary of 5 Years Preceding Retirement	Retirement Allowance		Reserve (Actuarial Equivalent)	
		Men	Women		Fraction of Salary	Amount	Men	Women
25	3	3.62	4.05	\$1,400	40/70	\$800	\$7,029	\$8,585
				700	40/70	400	3,514	4,292
30	7	3.76	4.32	1,400	39/70	780	6,853	8,370
				700	minimum	400	3,514	4,292
40	15	4.26	5.13	1,400	37/70	740	6,492	7,941
				700	minimum	400	3,514	4,292
50	30	5.01	6.16	1,400	42/70	840	7,380	9,014
				700	42/70	420	3,690	4,507
60	40	6.00	7.29	1,400	42/70	840	7,380	9,014
				700	42/70	420	3,690	4,507

**Table 6—Amount of Reserve Necessary to Provide a Certain Retirement Allowance at a Certain Age.**

Amount of Retirement Allowance	MEN													
	55	56	57	58	59	60	61	62	63	64	65	66	67	68
\$400	\$4,133	\$4,050	\$3,966	\$3,879	\$3,790	\$3,700	\$3,608	\$3,514	\$3,420	\$3,324	\$3,226	\$3,128	\$3,029	\$2,930
500	5,166	5,062	4,957	4,848	4,738	4,625	4,510	4,393	4,274	4,154	4,033	3,910	3,786	3,662
600	6,199	6,075	5,948	5,818	5,686	5,550	5,412	5,272	5,129	4,985	4,840	4,692	4,544	4,394
700	7,232	7,087	6,940	6,788	6,633	6,475	6,314	6,150	5,984	5,816	5,646	5,474	5,301	5,127
800	8,266	8,100	7,931	7,758	7,581	7,400	7,216	7,029	6,839	6,647	6,453	6,256	6,058	5,859
900	9,299	9,112	8,923	8,727	8,528	8,325	8,118	7,907	7,694	7,478	7,259	7,038	6,816	6,592
1,000	10,332	10,125	9,914	9,697	9,476	9,250	9,020	8,786	8,549	8,309	8,066	7,820	7,573	7,324

Amount of Retirement Allowance	WOMEN													
	55	56	57	58	59	60	61	62	63	64	65	66	67	68
\$400	\$5,129	\$5,015	\$4,898	\$4,780	\$4,660	\$4,539	\$4,416	\$4,292	\$4,168	\$4,042	\$3,916	\$3,789	\$3,662	\$3,535
500	6,412	6,269	6,123	5,975	5,825	5,674	5,520	5,366	5,210	5,053	4,895	4,736	4,578	4,419
600	7,694	7,522	7,348	7,170	6,990	6,808	6,624	6,439	6,251	6,063	5,873	5,683	5,493	5,303
700	8,976	8,776	8,572	8,365	8,155	7,943	7,728	7,512	7,293	7,074	6,852	6,630	6,409	6,187
800	10,258	10,030	9,797	9,560	9,320	9,078	8,832	8,585	8,335	8,084	7,831	7,578	7,324	7,070
900	11,541	11,283	11,021	10,755	10,485	10,212	9,936	9,658	9,377	9,095	8,810	8,525	8,240	7,954
1,000	12,823	12,537	12,246	11,950	11,650	11,347	11,040	10,731	10,419	10,105	9,789	9,472	9,155	8,838

**Table 7—Proposed Retirement Plan. Valuation of the Assets and Liabilities of the State, If Every Teacher In the State Elected to Enter the System.**

NOTE—The liabilities are calculated on the basis of the plan originally proposed—allowances computed on the basis of 10 year average salary, disability allowances at 1/75th rate of salary, no minimum amount of benefits.

**LIABILITIES**

Service pensions of present pension fund to be continued:		
Men .....	\$ 463,478	
Women .....	1,677,371	\$2,140,849
Disability pensions to be granted to annuitants of retirement fund who are not now drawing pensions, in order to guarantee continuation of present annuities:		
Men .....	\$ 133,101	
Women .....	556,407	689,508
Total pensions to teachers now retired.....	\$ 2,830,357	
Service allowances on account of future service to teachers now in service who remain to retire on service allowances:		
Men .....	\$2,337,454	
Women..	8,177,068	\$10,514,522
Less approximately one-half of allowance provided by contributions of teachers:		
Men .....	\$1,168,727	
Women..	4,088,534	5,257,261
Net service allowances on account of future service provided by state:		
Men .....	\$1,168,727	
Women..	4,088,534	\$5,257,261
Additional service allowances on account of prior service of present teachers to be provided by state:		
Men .....	\$2,020,661	
Women..	6,146,966	8,167,627
Total disability allowances payable to teachers now in service who become disabled:		
Men .....	\$ 447,352	
Women..	5,608,433	\$6,055,785
Less part of disability allowances provided by contributions of teachers:		
Men .....	\$ 93,884	
Women..	945,808	1,039,692
Net disability allowance provided by state:		
Men .....	\$ 353,468	
Women..	4,662,625	5,016,093
Special annuity benefits allowable on service retirement on account of contributions to Teachers' Retirement Fund:		
Men .....	\$ 43,809	
Women..	270,840	314,649
Total pensions to present teachers.....	\$18,755,630	
Grand Total.....	\$21,585,987	

**ASSETS**

Appropriations to be made by State.....\$21,585,987

\$21,585,987



## PART II

## Contents of Proposed Legislation

An act providing for the establishment of a Teachers' Pension and Retirement Fund of the State of New Jersey (Amendment of the Teachers' 35-Year Service Pension Law)

*Organization of Fund.* Establishment. Membership. Administration. *Benefits.* Superannuation. Disability. Death. Resignation or Dismissal. Optional Benefits. Additional annuity. Teachers now on retired list. *Financing.* Member's contributions. State's contributions. Guarantee of Solvency. *Other provisions.* Waiver of rights.

## ARTICLE I.

## Organization of the Fund.

## I. ESTABLISHMENT OF FUND:

On September 1, 1919, there shall be created in this state a fund called the Teachers' Pension and Retirement Fund of the State of New Jersey.

## II. MEMBERSHIP:

A. All teachers appointed after September 1, 1919, shall automatically become members of said Fund.

B. All present teachers who within a year after the establishment of the Fund shall elect to join it shall be members of the Fund. Those who are members of the Teachers' Retirement Fund must sign a waiver of all their rights under that Fund before they can be accepted into the Fund created by this act. The time for their joining it may be extended by the Retirement Board subject to the approval of the State Commission into a period not exceeding five years.

## III. ADMINISTRATION:

## A. Organization of Retirement Board:

(1) The Fund shall be managed by a Retirement Board consisting of seven members:

- a. Commissioner of Education.
- b. State Treasurer.
- c. One member, not a teacher, appointed by the Governor for a period of three years, except that the one appointed immediately after the passage of this act shall have a two year term.
- d. Three members of the Fund elected by the members of the Fund in accordance with the rules which the State Pension Commission shall prescribe, for a term of three years, except that two of those elected in the year 1919 shall have a one, and two year terms respectively.
- e. The seventh member not a teacher nor an officer of the state elected by the six for a period of three years except that the one elected in 1919 shall have a one year term.

(2) Until the organization of the Fund and the election of three members therefrom, the Commissioner of Education, the State Treasurer and the member appointed by the Governor shall perform the duties of the Retirement Board.

(3) A vacancy occurring in the Retirement Board shall be filled for the unexpired term by the appointment or election of a successor in the same manner as that of his predecessor.

(4) The members of the Board shall serve on it without compensation except that they shall be reimbursed for any necessary expenditures.

(5) The Board shall engage such actuarial and other technical services as may be required and appoint such administrative employees as may be necessary for the transaction of its business. The compensation of all persons employed by the Board shall be fixed by the Board.

(6) The Board shall have an office in such city as it may find most suitable for the transaction of its business.

## B. Chief Duties of Retirement Board:

(1) To keep such data as shall be necessary for actuarial valuation of the fund.

(2) To certify the rates of contributions which shall be deducted from the members' salaries and also those which shall be paid by the State.

(3) To receive contributions and manage, invest, submit to periodical valuations and keep in a solvent condition the fund.

(4) To grant retirement allowances in accordance with the provisions of this act.

(5) To make such reports and take such steps regarding the financing and management of the funds as the State Commission shall prescribe.

**C. Chief Duties of the School Authorities:**

The chief duties of the State Department of Public Instruction and of the branches of service in which the teachers are employed shall be:

- (1) To furnish the required records and information to the Retirement Board.
- (2) To make the deductions from members' salaries certified by the Retirement Board.

## ARTICLE II.

### Benefits.

#### I. SUPERANNUATION BENEFITS:

##### A. Condition of Allowances:

- (1) A superannuation allowance is granted upon the application of a member or at the request of the Board of Education employing the member, who has attained or passed the age of 62.
- (2) Retirement is compulsory at the age of seventy.

##### B. Amount of Allowance:

- (1) The amount of allowance is approximately equal to one-seventieth of the average salary of the five years immediately preceding retirement multiplied by the number of years the employee has been a member of the Fund. For a member with more than thirty-five years service the allowance is more than one-half salary.
- (2) The allowance consists of a pension of 1/140th of the average salary for each year the employee has been a member of the Fund and of an annuity such as his contributions will purchase at the time of his retirement. Members who were in the service prior to their becoming a member of the said fund are to receive an additional allowance of one-seventieth of the average salary of the last five years for each year of such prior service except that
  - a. In the case of the teachers who shall delay their joining the Fund beyond a year after its establishment, the time between the latter date and the date of their joining the fund shall not be counted for pension purposes.
- (3) The allowance shall in no case be less than \$400.
- (4) In computing the amount of the allowance, credit shall be given for the years of service rendered in the public schools of other states up to a maximum of 10 years.

#### II. DISABILITY BENEFIT:

##### A. Condition of Allowance:

- (1) An ordinary disability benefit is payable to any member who is physically or mentally incapacitated for duty after 10 or more years of service in New Jersey. The request for retirement on disability may come either from the member himself or from the Board of Education employing the member.

##### B. Amount of Allowance:

- (1) The allowance equals approximately 1/70th of the average salary of last 5 years for each year of service except that the years of service which are reduced or not counted for any superannuation pensions are similarly reduced or not counted for disability pensions.
- (2) The benefits consist of an annuity such as the employee's contributions will purchase and of a pension which provides the balance.
- (3) The allowance is in no case less than 30% of the member's average salary, or \$300, whichever amount shall be the largest. It can in no case exceed 9/10 of the allowance to which the member would have been entitled had he remained in the service until 62 years of age.
- (4) In computing the amount of the allowance credit shall be given for the years of service rendered in the public schools of other states up to a maximum of 10 years.

##### C. Safeguard Against Abuse:

Members retired on account of disability may be required to undergo periodical medical examinations. Members whose disabilities are found to be removed are to have their allowances reduced so that their earnings and pensions combined shall not exceed their previous earnings.

#### III. DEATH BENEFITS:

To the estate of any member who died before retirement there shall be refunded all his contributions together with interest at 3% compounded annually.

#### IV. REFUND OF CONTRIBUTIONS IN CASE OF RESIGNATION OR DISMISSAL:

A. In case of resignation or dismissal from the service prior to retirement the member shall receive a refund of all his contributions together with interest compounded annually at 3%.

B. The member who resigns or is dismissed may leave his contributions in the fund allowing them to draw interest and may withdraw them at a later date or in case of re-entrance in the service apply them to the credit of his or her future benefit. If a member takes a leave of absence and leaves his contributions in the fund, the state's contribution on his or her account shall be held in reserve for two years, so that in case the member is reinstated within that period, the member's and the state's contributions might continue at the same rate. If the member who with-

drew from the service returns after a longer absence, he is admitted as a new entrant and must contribute at a new rate according to his age at the time he re-enters the fund. If he desires credit for the prior service in New Jersey he must make up the contributions (if he withdrew them) in a lump sum or by means of annual instalments to cover one-half of the cost of the benefits on that account, in which case the state will make up the other half.

#### V. OPTIONAL BENEFITS:

Members upon retirement may elect to receive the actuarial equivalent of their pensions and annuities in any one of the following forms:

- (1) Total amount payable in monthly instalments throughout life, all payments ending at death.
- (2) Reduced payments during life with a provision that in case of death before such payments have equalled the present value of pension and annuity at rate of retirement, the balance shall be paid to the heirs or assigns.
- (3) Reduced payments covering two lives with a provision that at the death of the member the same payments or one-half of such payments shall be continued throughout the life of such other person as the member shall have designated.
- (4) Such other form of actuarial equivalent as may be certified by the actuary and approved by the retirement board.

#### VI. ADDITIONAL ANNUITY FOR PRIOR CONTRIBUTIONS:

A. Any teacher who transfers from the Teachers' Retirement Fund to the fund which is hereby established shall be credited for annuity purposes in the latter fund with the amount which he contributed to the Retirement Fund and shall receive on retirement such an annuity as this amount will purchase.

B. This annuity shall be paid notwithstanding any other annuity or pensions which the teacher may receive under this act.

#### VII. PROVISIONS FOR TEACHERS NOW ON THE RETIRED LIST:

A. The payment of pensions granted under the 35 Year Service Pension Act prior to the enactment of this amendment shall be continued as heretofore.

B. Any time any annuity received from the Teachers' Retirement Fund by any teacher who is on the retired list of said fund at the time of establishment of the Fund which is hereby created, and who has not been a beneficiary of the 35 Year Service Pension Act is reduced because of insufficiency of funds, there shall be paid to such retired teacher from the fund which is hereby established an additional annuity which together with the reduced annuity shall provide him with the same total annuity he has been receiving heretofore.

### ARTICLE III.

#### Financing.

#### I. CONTRIBUTIONS BY MEMBERS:

A. All new appointees will contribute from the date of their appointment and all other teachers who will join said fund shall contribute from the date of their becoming a member. The amount of the contribution is fixed as a percentage of salary and shall depend upon the sex and the age of the member at the time of his entrance in the fund.

B. The initial rate paid by the member is to continue unchanged until retirement unless altered at the time of actuarial revaluations.

C. These rates are computed by use of mortality and service experience tables and interest tables. Each member must put into the fund every year enough so that when he reaches the age of superannuation, his contribution will be sufficient to purchase approximately one-half the allowance which is promised. The cost of that allowance is determined by the average salary upon which it is based and upon the length of time the annuity will be drawn as shown by the mortality table. In determining the annual percentage that the member must contribute in order that the accumulated contributions be approximately equivalent to one-half the cost of the

allowance, consideration is made of expected increases in the member's salary and of the fact that the state will guarantee that member's contributions shall bear interest compounded at four per cent.

D. Members who have prior service at the time they become members of the Fund will purchase one-half the service allowance due to future service, and the state will provide the total allowance due to past service.

E. New entrants desiring credit for service in the public schools of other states up to a maximum of 10 years must contribute half of the cost of the benefit on that account.

F. Members' contributions are placed in a distinct and separate fund, called the Annuity Savings Fund. Each member's contributions are placed to his own account and may be withdrawn if he leaves the service without purchasing a retirement allowance.

#### II. CONTRIBUTIONS BY STATE:

A. The state will provide one-half of the cost of the service allowance to be granted on account of future service of the members, and half of the cost of the allowance for outside experience of

new entrants; all the allowances to be granted on account of prior service and outside experience of present members; the disability pension; the additional annuity in compensation for prior contributions made by members who have transferred from the Teachers' Retirement Fund to the Fund established by this act; and all pensions granted prior to the establishment of the Fund which is hereby created. The state will also contribute the cost of the minimum benefit provision, the administrative expenses of the system and cover any deficiency which the fund may develop.

B. The state will make its contributions in the following way:

- (1) To provide for pensions to be granted on account of service rendered after the teachers become members of the Fund, the state will pay on a reserve basis a certain percentage of the members' salaries.
- (2) To provide for allowances to be granted on account of service rendered by the teachers prior to their becoming members of said fund, the state will contribute on a reserve basis such a percentage of the salaries of said members as will according to the calculations of the actuary liquidate the deficiency on that account in approximately twenty-five years.

(3) The state shall appropriate each year without providing a special reserve:

- a. The amount necessary to pay the pensions of that year granted prior to the establishment of the Fund, which is hereby created.
- b. The amount necessary for the payment of administrative expenses of that year.
- c. The additional reserve necessary in cases where otherwise the superannuation or disability allowance would fall below the prescribed minimum of \$400 or \$300.

### III. PROVISIONS FOR CONTINUED SOLVENCY OF THE FUND:

A. Periodical actuarial valuations of the funds are required. The first valuation is to be taken a year after the establishment of the fund.

B. Contributions of the state and of the members shall be actuarially determined and be equivalent to the cost of the benefits provided.

C. Reserve funds shall be maintained by means of which accruing liabilities are provided for before they mature.

D. Investment of Funds is limited to those legal for sinking funds.

E. The State Pension Commission shall be responsible for their proper administration.

## ARTICLE IV.

### Other Provisions.

#### I. WAIVER OF RIGHTS UNDER RETIREMENT FUND AND ACCEPTANCE OF THIS ACT:

Any person who is now a member of the Teachers' Retirement Fund, established by Chapter.....of the Laws of..... may on or before..... of.....waive all rights and privileges he now has as such and accept the provisions of this act with all its rights and privileges by sending and delivering to the board of trustees of both funds a notice in the following form:

"To the Board of Trustees of the.....  
.....Fund of the State of New

Jersey. You are herewith notified that I hereby waive all the rights and privileges as a member of the Teachers' Retirement Fund under any provisions of any retirement act heretofore passed by the Legislature, and that I hereby accept the provisions of an act entitled..... and that I do hereby agree to be bound thereby. Date.....

A copy of said notice shall be filed with the Board of Education by whom the teacher is employed.

- II. Any acts or parts of acts inconsistent with this act are hereby repealed.

## PART III.

## Actuarial Estimates

## Cost of Existing Systems and of Proposed Plan

Provisions of Existing Laws and Proposed Plan. Service factors considered in the Valuation. Rates of Separation. Service and Mortality tables. Annuity values. Procedure in the valuation. Age distribution. Valuation Balance Sheet.

**NOTE**—At the time the question of the preparation of an actuarial estimate of the liabilities of the Teachers' Retirement Fund and of the 35 Year Service Pension was first discussed the Commission realized that the estimate could not be based upon the actual mortality and rate of withdrawal from the service which obtains among the New Jersey teachers. It would have required considerable funds and time, neither of which were available, to collect data regarding the number of deaths, resignations and dismissals at different ages and after different lengths of service, which have occurred during the past years in the New Jersey school system and to make a detailed study of these factors.

It was decided, therefore, to use the results of the exhaustive investigations made in some other states of the rate of mortality and withdrawal from the service prevailing among the teachers and to collect data regarding the ages, salaries, lengths of service of the teachers of New Jersey. Reliable estimates could be prepared on such a basis.

The actuary prepared an estimate and presented a preliminary report based upon the complete results of the census taken by the Commission and then proceeded to calculate the cost of the changes in the existing systems which the Commission proposed to introduce. The procedure followed in the preparation of the actuarial estimates is described below. It is believed that the figures given may be safely employed as a basis for the establishment of the plan of reorganization, should such a plan be accepted.

#### PROVISIONS OF EXISTING RETIREMENT AND PENSION LAWS AND PROPOSED PLAN OF REORGANIZATION.

The following summaries include only those provisions which were considered in the statements of cost herein after presented.

##### Provisions of the Teachers' Retirement Fund.

In considering the Teachers' Retirement Fund, it seemed advisable to divide members into two classes, and consider separately the benefits and contributions to be made by each class.

#### CLASS I.

In this class are teachers who joined the system prior to 1906 and 1907, and did not accept the new provisions offered to them when the system was reorganized in 1906 and 1907.

##### *Benefits of the System.*<sup>1</sup>

A disability annuity of 50% of the average salary of the 5 years preceding retirement is payable to teachers disabled after 20 years of service in New Jersey. The minimum annuity is \$250 per year, and the maximum is \$600 per year.

<sup>1</sup> The law also provides for the return of one-half of the teachers' contributions to teachers who resign after 5 years of service. Because of the small number who might claim this benefit, it was not considered in the valuation.

##### *Support of the System.*

Teachers must contribute annually 1%<sup>2</sup> of their salaries and of the annuities. A minimum of 20% of the first year's annuity must be contributed before retirement.

#### CLASS II.

In class II. are all teachers who are members of the retirement system in accordance with the provisions of the system after the reorganization of 1906 and 1907.

##### *Benefits of the System.*

A disability annuity of 60% of the average salary of the last 5 years preceding retirement is payable to teachers disabled after 20 years of service in New Jersey. The minimum is \$250 per year, and the maximum annuity is \$650 per year.

##### *Support of System.*

Teachers contribute according to the years of service at the time they became members, as follows:

Teachers with 10 years service or less at entrance must contribute 1% of salary annually. Teachers with more than 10 years, but less than 15, must contribute 2 ½% of salary annually. Teachers with 15 years of service and over at the time of entrance must contribute 3% of salary annually.

Teachers must contribute a minimum of the first year's annuity before retiring, but the maximum annual contribution is \$50, and the maximum total contributions are \$1,000.

##### Provisions of the State 35-Year Service Pension Act.

##### *Benefits of the System.*

A service pension of one-half the average salary of the last 5 years of service is provided for

- (1) Teachers, teacher-clerks, principals, and persons employed in any supervisory capacity in the public schools, who complete 35 years of active service, the last 25 years of which were rendered in the state.
- (2) Teachers who attain age 70, the last 20 years of service having been rendered in the state.
- (3) Teachers who attain age 75, 32 years of service having been rendered in the state.
- (4) Teachers, teacher-clerks, principals, and persons employed in any supervisory capacity in the public schools who are disabled, having had 35 years of service in the state, and having attained 70 years of age.

##### *Support of System.*

This system is supported entirely by appropriations made by the state, as the benefits become payable.

<sup>2</sup> There is also a very small group included in this class who contribute 2% of their salaries, according to amendments to law in 1902 and 1903.

Proposed Reorganization of State Pension.<sup>1</sup>*Benefits of System.*

1. A service benefit is payable to teachers attaining age 62 of 1/70 of the average salary of the last ten years, multiplied by the number of years the teacher has taught. Retirement is compulsory at age 70.

2. A disability benefit is payable after 10 or more years of service of 1/75 of the average salary of the last ten years multiplied by the number of years the teacher has taught. The minimum of 30% of the average salary of the last ten years except that no disability allowance is to exceed 8/9 of the allowance which would have been received by the teacher, had the teacher remained to obtain a superannuation benefit.

3. Return of teachers' contributions together with 3% compound interest is made to teachers leaving the service without retirement benefits.

4. Additional disability pensions are provided in case the annuities paid by the Teachers' Retirement Fund are reduced.

*Support of System.**By Teachers.*

Such percentage of salary as is sufficient to provide (1) one-half the cost of the superannuation allowance which is dependent upon future service; (2) the return of contributions, with 3% compound interest, at separation prior to age 62.

*By State.*

Such contributions as are sufficient to provide (1) one-half the cost of the superannuation allowance which is dependent upon future service, together with the total cost of the superannuation benefit which is dependent upon past service; (2) that part of the cost of the disability allowance which is not provided by the disabled teachers' accumulated contributions toward the superannuation benefit.

## SERVICE FACTORS REQUIRED TO MAKE VALUATION.

In order to make a valuation of the assets and liabilities of the retirement plans presented above, the probable rates at which New Jersey teachers will leave the active service in the future and their probable mortality when drawing retirement allowances were required. As the same rates of separation from active service and the same rates of pensioners' mortality do not apply to both men and women, the men and women teachers were considered in distinct groups and rates were derived for each group. The required rates were summarized as follows:

- (1) Rate of withdrawal from active service.
- (2) Rate of death in active service.
- (3) Rate of separation on account of disability.
- (4) Rate of salary change.
- (5) Rate of death of service annuitants.
- (6) Rate of death of disability annuitants.

*Collection of Data.*

The census card which was collected by the Pension and Retirement Fund Commission from each teacher and which was used by the actuary in preparing the rates of salary increase, and the age and service distribution of teachers necessary for the valuations is shown below:

## ADOPTED RATES OF SEPARATION.

*Active Service Rates.*

The following tables give the rates of separation from active service adopted for use in the valuations.

<sup>1</sup> Note—Since this report has been submitted, several changes in the proposed retirement plan have been made: the 10-year basis in considering the amount of salary has been changed to 5 years, the disability rate increased to 1/70th fraction, and the interest in case of refunds fixed at 3%. For a fuller statement regarding the benefits of the proposed plan see statements on pages 11 and 14.

Table 1—Rates of Separation from Active Service. Men Teachers.

Age	Rate of Withdrawal	Rate of Death	Rate of Disability	Rate of Service Retirement
18	.0208	.0024	.0005	
19	.0220	.0025	.0005	
20	.0248	.0026	.0005	
21	.0257	.0028	.0005	
22	.0263	.0029	.0005	
23	.0265	.0030	.0005	
24	.0263	.0032	.0005	
25	.0258	.0033	.0005	
26	.0250	.0035	.0005	
27	.0240	.0036	.0006	
28	.0228	.0037	.0006	
29	.0215	.0039	.0006	
30	.0203	.0040	.0006	
31	.0189	.0041	.0006	
32	.0174	.0041	.0006	
33	.0160	.0042	.0007	
34	.0147	.0043	.0007	
35	.0135	.0044	.0007	
36	.0122	.0044	.0007	
37	.0109	.0045	.0008	
38	.0097	.0045	.0008	
39	.0085	.0046	.0009	
40	.0074	.0046	.0010	
41	.0063	.0047	.0010	
42	.0054	.0047	.0011	
43	.0045	.0048	.0012	
44	.0038	.0049	.0014	
45	.0032	.0050	.0015	
46	.0027	.0052	.0017	
47	.0022	.0053	.0018	
48	.0018	.0055	.0020	.0255
49	.0015	.0057	.0022	.0289
50	.0011	.0060	.0025	.0321
51	.0008	.0062	.0028	.0353
52	.0005	.0065	.0031	.0392
53	.0003	.0069	.0035	.0430
54	.0000	.0073	.0039	.0470
55		.0078	.0044	.0511
56		.0083	.0049	.0553
57		.0089	.0056	.0599
58		.0096	.0063	.0647
59		.0104	.0072	.0698
60		.0112	.0082	.0747
61		.0120	.0096	.0801
62		.0130	.0110	.0864
63		.0139	.0125	.0931
64		.0149	.0142	.1001
65		.0159	.0160	.1085
66		.0170	.0180	.1190
67		.0183	.0200	.1330
68		.0195	.0223	.1645
69		.0209	.0245	.2400
70		.0222	.0270	.9640

The data available for use as a basis in adopting the rates in Tables 1 and 2 was presented as the result of actuarial investigations of the service experience of teachers in various retirement systems, namely, the Teachers' Retirement Fund of the City of New York;<sup>2</sup> Boston Teachers' Retirement Fund;<sup>3</sup> Teachers' Superannuation Fund of New Zealand;<sup>4</sup> Elementary School Teachers' Deferred Annuity Fund of England and Scotland.<sup>5</sup>

In adopting rates for use, the fact that monetary values were to be made dependent upon them was kept in mind. Where several services indicated a marked similarity in any one rate, the rate adopted followed closely the one indicated by these services. Peculiarities in any experience which were evidently characteristic of the one service alone were rejected. An effort was made to adopt such rates that, when used in combination, would form a safe and reasonable basis for estimating the cost of the proposed retirement plan.

<sup>2</sup> Investigated 1912-1915  
1914

<sup>3</sup> Investigated 1912-1915  
1906-1914-1916



Table 2—Rates of Separation from Active Service.  
Women Teachers.

Age	Rate of Withdrawal	Rate of Death	Rate of Disability	Rate of Service Retirement
18	.0026	.0011	.0005	
19	.0063	.0012	.0005	
20	.0123	.0013	.0005	
21	.0214	.0014	.0005	
22	.0318	.0016	.0005	
23	.0563	.0018	.0005	
24	.0720	.0020	.0005	
25	.0760	.0023	.0006	
26	.0770	.0025	.0006	
27	.0752	.0028	.0006	
28	.0717	.0030	.0007	
29	.0668	.0032	.0008	
30	.0615	.0033	.0008	
31	.0548	.0034	.0008	
32	.0471	.0035	.0009	
33	.0393	.0036	.0010	
34	.0319	.0036	.0010	
35	.0262	.0036	.0011	
36	.0216	.0037	.0012	
37	.0177	.0039	.0013	
38	.0159	.0040	.0016	
39	.0133	.0042	.0029	
40	.0111	.0044	.0045	
41	.0090	.0046	.0064	
42	.0073	.0048	.0088	
43	.0055	.0050	.0103	
44	.0043	.0053	.0110	
45	.0034	.0056	.0113	
46	.0028	.0059	.0114	.0649
47	.0023	.0062	.0114	.0669
48	.0019	.0066	.0114	.0693
49	.0018	.0070	.0114	.0719
50	.0016	.0075	.0114	.0747
51	.0015	.0080	.0114	.0779
52	.0014	.0085	.0114	.0812
53	.0013	.0091	.0114	.0850
54	.0013	.0097	.0114	.0893
55	.0011	.0104	.0114	.0943
56	.0010	.0112	.0114	.0998
57	.0009	.0120	.0114	.1058
58	.0009	.0129	.0114	.1129
59	.0008	.0139	.0114	.1210
60	.0006	.0150	.0114	.1308
61	.0005	.0162	.0114	.1420
62	.0004	.0175	.0114	.1570
63	.0003	.0189	.0114	.1770
64	.0001	.0204	.0116	.2000
65	.0001	.0222	.0124	.2290
66	.0000	.0240	.0147	.2700
67		.0262	.0177	.3281
68		.0289	.0215	.4321
69		.0324	.0263	.6553
70		.0367	.0329	.9633

Rates for Men Teachers.

The rate of withdrawal from active service adopted for use in valuing benefits to men teachers in New Jersey is a rate somewhat similar to that obtaining among New York City men teachers. It lies between the rate applying to men teachers in New Zealand, which is a comparatively high rate, and that applying to English and Scottish teachers, which is a comparatively low rate. The death rate assumed to reflect the mortality of men teachers is a higher rate of death than that based on the experience of New York City teachers with the exception of the rate from age 30 to age 38. It is a lower rate than that derived from the experience of English Elementary Teachers by King in 1906, but is somewhat higher to about age 48 than the rate derived for that service by Hardy in 1914. The rate of disability for men teachers of New Jersey is higher than the rate for New York City teachers but lower than that based on the experience of English

and Scottish teachers. The rate of service retirement is one based upon the experience of New York City teachers. This rate was employed in valuing all retirement benefits payable after 35 years of service, with the exception that an assumption was made that only nine-tenths of the retirements assumed to occur according to the rate would actually be granted in the case of retirements through disability after 35 years of service under the Teachers' Retirement Fund. The rate of death after eligibility for retirement is also based upon that experience. It is published in Part II. of the Report of the Commission on Pensions of New York.

Rates for Women.

The rates adopted for the valuation of benefits to women teachers follow closely those employed recently by David P. Fackler, actuary, in the preparation of an estimate of the liabilities of the Teachers' Retirement Fund of New Jersey. The rate of withdrawal employed by him is 25% higher than the one found to obtain among women teachers in New York City. This rate to age 38, is a rate of withdrawal from all causes including disability. The rate of withdrawal adopted for women teachers is one based upon the rates used by Mr. Fackler, but covers only those causes of withdrawal which were assumed to have occurred through resignation and dismissal.

The rate of disability is based upon the experience of New York City teachers to about age 46 where the assumption is made that, unlike the latter rate, it is not influenced by early service retirements, and continues to increase. The rate of death in active service and the rate of retirement upon eligibility are based upon the experience of New York City teachers. As in the case of valuing benefits to men teachers, the assumption was made that only nine-tenths of the retirements assumed to occur according to the rate would actually be granted in the case of retirements through disability after 35 years of service under the Teachers' Retirement Fund.

Pensioners' Mortality Rates.

The following table shows the rates of mortality which were assumed to reflect the death rates of pensioners among New Jersey teachers. These rates are those found to obtain among service pensioners in New York City.

Table 3.—Service Pensioners' Mortality Rates.

Age	Men	Women	Age	Men	Women
50	.0335	.0134	78	.1156	.0845
51	.0342	.0140	79	.1238	.0916
52	.0350	.0146	80	.1328	.0994
53	.0358	.0153	81	.1423	.1078
54	.0367	.0161	82	.1528	.1170
55	.0377	.0169	83	.1640	.1268
56	.0387	.0178	84	.1762	.1376
57	.0399	.0188	85	.1895	.1492
58	.0412	.0199	86	.2033	.1618
59	.0426	.0212	87	.2189	.1753
60	.0441	.0225	88	.2355	.1900
61	.0458	.0239	89	.2528	.2057
62	.0477	.0255	90	.2717	.2226
63	.0497	.0273	91	.2918	.2409
64	.0519	.0292	92	.3132	.2600
65	.0543	.0313	93	.3360	.2810
66	.0569	.0335	94	.3600	.3029
67	.0599	.0361	95	.3855	.3262
68	.0630	.0388	96	.4121	.3510
69	.0665	.0418	97	.4399	.3771
70	.0702	.0450	98	.4691	.4045
71	.0743	.0486	99	.4994	.4331
72	.0789	.0525	100	.5303	.4629
73	.0837	.0567	101	.6000	.4938
74	.0891	.0614	102	.8000	.5256
75	.0949	.0664	103		.5584
76	.1013	.0720	104		.5916
77	.1082	.0780	105		.6500

Table 4.—Disability Pensioners' Mortality Rates.

Age	Men	Women	Age	Men	Women
20	.06096	.03695	61	.05059	.04078
21	.06086	.03617	62	.05253	.04258
22	.05718	.03526	63	.05466	.04452
23	.05122	.03425	64	.05700	.04670
24	.04470	.03318	65	.05952	.04902
25	.03911	.03203	66	.06233	.05160
26	.03521	.03087	67	.06536	.05444
27	.03294	.02973	68	.06866	.05747
28	.03187	.02864	69	.07232	.06084
29	.03150	.02763	70	.07269	.06450
30	.03145	.02674	71	.08061	.06849
31	.03151	.02598	72	.08532	.07287
32	.03162	.02536	73	.09045	.07767
33	.03176	.02488	74	.09610	.08286
34	.03191	.02457	75	.10224	.08847
35	.03208	.02438	76	.10884	.09470
36	.03226	.02429	77	.11615	.10143
37	.03246	.02430	78	.12393	.10872
38	.03267	.02440	79	.13261	.11668
39	.03292	.02456	80	.14172	.12528
40	.03317	.02475	81	.15198	.13462
41	.03346	.02502	82	.16275	.14490
42	.03377	.02528	83	.17452	.15575
43	.03412	.02559	84	.18735	.16776
44	.03449	.02595	85	.20093	.18069
45	.03491	.02632	86	.21584	.19432
46	.03536	.02674	87	.23170	.20955
47	.03586	.02719	88	.24910	.22545
48	.03640	.02770	89	.26707	.24281
49	.03700	.02825	90	.28668	.26079
50	.03764	.02885	91	.30742	.28110
51	.03838	.02950	92	.32964	.30183
52	.03915	.03024	93	.35308	.32437
53	.04001	.03102	94	.37801	.34780
54	.04095	.03189	95	.40395	.37298
55	.04198	.03285	96	.43129	.39925
56	.04312	.03388	97	.45997	.42681
57	.04435	.03503	98	.48922	.45567
58	.04571	.03628	99	.52032	.48559
59	.04720	.03764	100	.55171	.51648
60	.04881	.03914	101	.58364	.54824

## SERVICE AND MORTALITY TABLES.

The following active service tables were constructed on the basis of rates given in Tables 1 and 2 respectively. The salary scales were based upon rates of salary increase found to obtain among teachers in New Jersey.

Table 5.—Active Service Table. Men Teachers.

Age	Living	Withdrawals	Disability Cases	Deaths	Salary Scale
18	100,000	2,080	50	240	530
19	97,630	2,148	49	244	615
20	95,189	2,361	48	247	694
21	92,533	2,378	46	259	772
22	89,850	2,363	45	261	849
23	87,181	2,310	43	262	920
24	84,566	2,224	42	271	990
25	82,029	2,114	41	273	1,060
26	79,601	1,994	39	275	1,130
27	77,293	1,861	41	278	1,200
28	75,113	1,712	43	281	1,270
29	73,077	1,572	44	284	1,330
30	71,177	1,442	45	285	1,390
31	69,405	1,307	46	285	1,450
32	67,767	1,170	47	281	1,510
33	66,269	1,057	48	280	1,560
34	64,884	952	49	277	1,605
35	63,606	859	50	274	1,650
36	62,423	758	51	271	1,695
37	61,343	672	52	270	1,735
38	60,349	582	53	270	1,775
39	59,444	508	54	270	1,812
40	58,612	435	58	269	1,845
41	57,850	366	59	269	1,875
42	57,156	309	62	269	1,905
43	56,516	254	68	271	1,935
44	55,923	213	78	274	1,965
45	55,358	177	83	277	1,990
46	54,821	148	93	285	2,015

Table 5.—Continued.

Age	Living	Withdrawals	Disability Cases	Deaths	Salary Scale
47	54,295	119	98	288	2,040
48	53,790	97	107	296	2,065
49	53,290	80	117	304	2,085
50	52,789	58	132	317	2,105
51	52,282	42	147	324	2,125
52	51,769	26	160	336	2,145
53	51,247	15	179	354	2,165
54	50,699		198	370	2,180
55	50,131		221	391	2,195
56	49,519		243	411	2,205
57	48,865		274	435	2,215
58	48,156		304	462	2,225
59	47,390		341	493	2,235
60	46,556		382	521	2,245
61	45,653		438	549	2,250
62	44,666		491	581	2,255
63	43,594		545	606	2,260
64	42,443		603	632	2,265
65	41,208		660	655	2,270
66	39,893		718	678	2,275
67	38,497		769	705	2,280
68	37,023		826	722	2,285
69	35,475		869	741	2,290
70	33,865				2,295

Table 6.—Active Service Table. Women Teachers.

Age	Living	Withdrawals	Disability Cases	Deaths	Salary Scale
18	100,000	260	50	110	513
19	99,580	628	50	119	528
20	98,783	1,216	49	128	543
21	97,390	2,084	49	136	566
22	95,121	3,025	48	152	592
23	91,896	5,182	47	165	622
24	86,502	6,233	47	173	659
25	80,049	6,086	46	184	699
26	73,733	5,678	44	184	740
27	67,827	5,098	44	190	780
28	62,495	4,481	44	187	815
29	57,783	3,862	44	185	845
30	53,692	3,302	43	177	870
31	50,170	2,749	40	171	890
32	47,210	2,224	42	165	910
33	44,779	1,760	45	161	930
34	42,813	1,364	45	154	950
35	41,250	1,081	45	149	970
36	39,975	863	48	148	990
37	38,916	688	51	152	1,000
38	38,025	605	61	152	1,010
39	37,207	495	108	156	1,020
40	36,448	405	164	160	1,030
41	35,719	321	229	164	1,040
42	35,005	256	308	168	1,050
43	34,273	189	353	171	1,055
44	33,560	144	369	178	1,060
45	32,869	112	371	184	1,065
46	32,202	90	367	190	1,070
47	31,555	72	360	196	1,080
48	30,927	59	352	204	1,085
49	30,312	54	346	212	1,090
50	29,700	47	339	223	1,095
51	29,091	43	332	233	1,100
52	28,483	40	325	242	1,110
53	27,876	36	318	254	1,115
54	27,268	35	311	265	1,120
55	26,657	29	304	277	1,130
56	26,047	26	297	292	1,140
57	25,432	23	290	305	1,145
58	24,814	22	283	320	1,150
59	24,189	19	276	336	1,160
60	23,558	14	269	353	1,165
61	22,922	11	262	371	1,175
62	22,278	9	254	390	1,180
63	21,625	6	247	409	1,190
64	20,963	2	243	428	1,200
65	20,290	2	252	450	1,208
66	19,586		288	470	1,215
67	18,828		333	493	1,220
68	18,002		387	520	1,230
69	17,095		450	554	1,235
70	16,091				1,240

**RETIREMENT TABLES.**

The active service tables trace the history of teachers until they become eligible to retire. The retirement tables continue the history of teachers from that time until they leave the service.

**Table 7.—Retirement Table. Men Teachers.**

Age	Living	Dying	Retirements
48	100,000	350	2,550
49	97,100	369	2,806
50	93,925	424	3,015
51	90,486	443	3,240
52	86,803	458	3,403
53	82,942	474	3,567
54	78,901	491	3,708
55	74,702	519	3,817
56	70,366	562	3,891
57	65,913	578	3,948
58	61,387	589	3,972
59	56,826	593	3,938
60	52,295	593	3,906
61	47,796	642	3,828
62	43,326	673	3,744
63	38,909	700	3,623
64	34,586	719	3,462
65	30,405	711	3,299
66	26,395	677	3,141
67	22,577	643	3,003
68	18,931	602	3,114
69	15,215	514	3,652
70	11,049	398	10,651

**Table 8.—Retirement Table. Women Teachers.**

Age	Living	Dying	Retirements
46	100,000	590	6,490
47	92,920	580	6,216
48	86,124	569	5,969
49	79,586	559	5,722
50	73,305	547	5,476
51	67,282	535	5,241
52	61,506	522	4,994
53	55,990	508	4,759
54	50,723	493	4,529
55	45,701	475	4,310
56	40,916	457	4,083
57	36,376	437	3,848
58	32,091	414	3,623
59	28,054	390	3,394
60	24,270	364	3,174
61	20,732	335	2,944
62	17,453	305	2,740
63	14,408	272	2,550
64	11,586	237	2,317
65	9,032	200	2,068
66	6,764	162	1,826
67	4,776	124	1,567
68	3,085	87	1,333
69	1,665	51	1,091
70	523	17	506

**MORTALITY TABLES.**

The following table is based upon the rates of mortality adopted for pensioners.

**Table 9.—Mortality Table for Service Pensioners.**

MEN			WOMEN		
Age	Living	Dying	Living	Dying	
50	66,715	2,237	75,857	1,014	
51	64,478	2,206	74,843	1,044	
52	62,272	2,177	73,799	1,076	
53	60,095	2,150	72,723	1,112	
54	57,945	2,125	71,611	1,150	
55	55,820	2,102	70,461	1,191	
56	53,718	2,080	69,270	1,235	
57	51,638	2,060	68,035	1,282	
58	49,578	2,042	66,753	1,331	
59	47,536	2,024	65,422	1,384	
60	45,512	2,009	64,038	1,440	
61	43,503	1,993	62,598	1,498	
62	41,510	1,979	61,100	1,560	
63	39,531	1,964	59,540	1,624	
64	37,567	1,949	57,916	1,690	
65	35,618	1,935	56,226	1,758	
66	33,683	1,918	54,468	1,827	

**Table 9—Continued.**

67	31,765	1,902	52,641	1,898
68	29,863	1,881	50,743	1,968
69	27,982	1,860	48,775	2,037
70	26,122	1,835	46,738	2,104
71	24,287	1,805	44,634	2,169
72	22,482	1,773	42,465	2,228
73	20,709	1,734	40,237	2,283
74	18,975	1,691	37,954	2,329
75	17,284	1,640	35,625	2,367
76	15,644	1,584	33,258	2,393
77	14,060	1,521	30,865	2,406
78	12,539	1,450	28,459	2,405
79	11,089	1,373	26,054	2,387
80	9,716	1,290	23,667	2,352
81	8,426	1,199	21,315	2,298
82	7,227	1,104	19,017	2,224
83	6,123	1,004	16,793	2,130
84	5,119	902	14,663	2,018
85	4,217	799	12,645	1,887
86	3,418	695	10,758	1,741
87	2,723	596	9,017	1,581
88	2,127	501	7,436	1,413
89	1,626	411	6,023	1,239
90	1,215	330	4,784	1,065
91	885	258	3,719	896
92	627	196	2,823	734
93	430	145	2,089	587
94	286	103	1,502	455
95	183	71	1,047	342
96	112	46	705	247
97	66	29	458	173
98	37	17	285	115
99	20	10	170	74
100	10	5	96	45
101	5	3	51	25
102	2	2	26	14
103			12	7
104			5	3
105			2	2

**Table 10.—Mortality Tables for Disability Pensioners.**

MEN			WOMEN		
Age	Living	Dying	Living	Dying	
20	216,110	13,173	150,277	5,553	
21	202,937	12,351	144,724	5,235	
22	190,586	10,898	139,489	4,919	
23	179,688	9,203	134,570	4,609	
24	170,485	7,621	129,961	4,312	
25	162,864	6,370	125,649	4,024	
26	156,494	5,510	121,625	3,755	
27	150,984	4,974	117,870	3,504	
28	146,010	4,654	114,366	3,275	
29	141,356	4,453	111,091	3,069	
30	136,903	4,305	108,022	2,888	
31	132,598	4,178	105,134	2,731	
32	128,420	4,061	102,403	2,597	
33	124,359	3,950	99,806	2,483	
34	120,409	3,842	97,323	2,391	
35	116,567	3,739	94,932	2,314	
36	112,828	3,640	92,618	2,250	
37	109,188	3,544	90,368	2,196	
38	105,644	3,451	88,172	2,151	
39	102,193	3,364	86,021	2,113	
40	98,829	3,278	83,908	2,077	
41	95,551	3,197	81,831	2,047	
42	92,354	3,119	79,784	2,017	
43	89,235	3,045	77,767	1,990	
44	86,190	2,973	75,777	1,966	
45	83,217	2,905	73,811	1,943	
46	80,312	2,840	71,863	1,922	
47	77,472	2,778	69,946	1,902	
48	74,694	2,719	68,044	1,885	
49	71,975	2,663	66,159	1,869	
50	69,312	2,609	64,290	1,855	
51	66,703	2,560	62,435	1,842	
52	64,143	2,511	60,593	1,832	
53	61,632	2,466	58,761	1,823	
54	59,166	2,423	56,938	1,816	
55	56,743	2,382	55,122	1,811	

Table 10—Continued.

Age	MEN		WOMEN	
	Living	Dying	Living	Dying
56	54,361	2,344	53,311	1,806
57	52,017	2,307	51,505	1,804
58	49,710	2,272	49,701	1,803
59	47,438	2,239	47,898	1,803
60	45,199	2,206	46,095	1,804
61	42,993	2,175	44,291	1,806
62	40,818	2,144	42,485	1,809
63	38,674	2,114	40,676	1,811
64	36,560	2,084	38,865	1,815
65	34,476	2,052	37,050	1,816
66	32,424	2,021	35,234	1,818
67	30,403	1,987	33,416	1,819
68	28,416	1,951	31,597	1,816
69	26,465	1,914	29,781	1,812
70	24,551	1,873	27,969	1,804
71	22,678	1,828	26,165	1,792
72	20,850	1,779	24,373	1,776
73	19,071	1,725	22,597	1,755
74	17,346	1,667	20,842	1,727
75	15,679	1,603	19,115	1,691
76	14,076	1,532	17,424	1,650
77	12,544	1,457	15,774	1,600
78	11,087	1,374	14,174	1,541
79	9,713	1,288	12,633	1,474
80	8,425	1,194	11,159	1,398
81	7,231	1,099	9,761	1,314
82	6,132	998	8,447	1,224
83	5,134	896	7,223	1,125
84	4,238	794	6,098	1,023
85	3,444	692	5,079	921
86	2,752	594	4,158	808
87	2,158	500	3,350	702
88	1,658	413	2,648	597
89	1,245	333	2,051	498
90	912	262	1,553	405
91	651	200	1,148	323
92	451	149	825	249
93	302	107	576	187
94	195	74	389	135
95	122	50	254	95
96	72	31	159	63
97	41	19	96	41
98	22	11	55	25
99	11	6	30	15
100	5	3	15	8
101	2	1	7	4
102	1	1	3	2
103			1	1

## ANNUITY VALUES FOR PENSIONERS.

The following tables give the annuity values constructed on the basis of the mortality tables.

Table 11.—Annuity Values for Disability Pensioners.

Age	Men	Women	Age	Men	Women
20	12.124	14.071	58	9.285	10.144
21	12.373	14.155	59	9.074	9.907
22	12.649	14.234	60	8.859	9.666
23	12.901	14.306	61	8.639	9.421
24	13.093	14.367	62	8.416	9.172
25	13.210	14.417	63	8.189	8.920
26	13.256	14.453	64	7.959	8.665
27	13.250	14.473	65	7.726	8.407
28	13.212	14.477	66	7.491	8.148
29	13.156	14.465	67	7.254	7.886
30	13.090	14.436	68	7.015	7.624
31	13.019	14.391	69	6.776	7.361
32	12.943	14.332	70	6.535	7.097
33	12.864	14.260	71	6.295	6.834
34	12.780	14.175	72	6.056	6.572
35	12.692	14.081	73	5.817	6.311
36	12.600	13.977	74	5.679	6.053
37	12.503	13.865	75	5.344	5.796
38	12.402	13.746	76	5.111	5.543
39	12.296	13.620	77	4.881	5.293
40	12.186	13.488	78	4.655	5.048
41	12.070	13.351	79	4.433	4.806
42	11.950	13.208	80	4.216	4.570
43	11.824	13.059	81	4.002	4.339
44	11.693	12.904	82	3.795	4.114

Table 11—Continued.

45	11.556	12.744	83	3.593	3.895
46	11.415	12.578	84	3.397	3.683
47	11.267	12.406	85	3.208	3.477
48	11.114	12.229	86	3.024	3.279
49	10.956	12.045	87	2.847	3.087
50	10.792	11.856	88	2.677	2.904
51	10.622	11.661	89	2.516	2.727
52	10.447	11.461	90	2.361	2.559
53	10.267	11.254	91	2.213	2.397
54	10.081	11.043	92	2.070	2.244
55	9.890	10.825	93	1.938	2.098
56	9.693	10.603	94	1.810	1.961
57	9.492	10.376	95	1.691	1.827

Table 12.—Annuity Values for Service Pensioners.

Age	Men	Women	Age	Men	Women
50	11.285	14.179	73	6.076	7.271
51	11.105	13.919	74	5.828	6.966
52	10.920	13.653	75	5.584	6.664
53	10.730	13.382	76	5.341	6.366
54	10.533	13.105	77	5.102	6.074
55	10.332	12.823	78	4.867	5.787
56	10.125	12.537	79	4.635	5.506
57	9.914	12.246	80	4.409	5.232
58	9.697	11.950	81	4.187	4.964
59	9.476	11.650	82	3.971	4.704
60	9.250	11.347	83	3.761	4.451
61	9.020	11.040	84	3.556	4.206
62	8.786	10.731	85	3.359	3.969
63	8.549	10.419	86	3.168	3.740
64	8.309	10.105	87	2.983	3.521
65	8.066	9.789	88	2.805	3.309
66	7.820	9.472	89	2.637	3.107
67	7.573	9.155	90	2.474	2.914
68	7.324	8.838	91	2.318	2.729
69	7.074	8.521	92	2.170	2.554
70	6.824	8.206	93	2.030	2.387
71	6.574	7.892	94	1.895	2.230
72	6.324	7.580	95	1.765	2.081

## PROCEDURE IN PREPARATION OF VALUATION.

By use of the preceding tables, the present value of the various benefits equated to one dollar of salary were calculated for the various service groups of teachers. A 4% interest rate was assumed. These values were multiplied into present salaries of teachers and the results combined to form the present value of all benefits payable to teachers.

The valuation of contributions to be received from present members of the Teachers' Retirement Fund involved more complex calculations than did any of the benefit provisions. Members of the Retirement Fund are required to have contributed a certain percentage of the first year's annuity before they are eligible to retire. To value the increase in the income of the fund which would result from provisions of this type, the following general methods were employed.

First a summation column was made on the salary scale and then several curves were drawn on cross section paper showing various percentages of it, such as 1%, 2%, 3%, etc. The figures formed by dropping ordinates from the ends of each of the curves to the base line were then cut out of the paper and used as templates. A certain percentage of the salary scale, generally 60%, was then plotted on co-ordinate paper of the same graduation. The template showing the accumulations at 2% was placed on the graph showing 60% of the salary scale in such a way that the ordinate on the graph for the age at entrance of a contributor at its point of intersection with the base line coincided with the ordinate for the same age at its intersection with the curves of the template. Then the template was swung at this point as an axis until the base line of both curves were parallel and the other point of intersection of the two curves was noted. This latter point indicated the age at which 2% of any salary beginning at the entrance age and accumulated would amount to 60% of the salary, if the salary had increased according to the average rates of increase indicated by the salary scales. Using the age thus obtained, the value of an insurance payment of 60% of the salary payable in the

event of disability during the term prior to this age during which the teacher would be eligible for annuity in the event of disability was calculated. Then the value of returning to teachers disabled during the same term the total amount of their accumulated contributions without interest was calculated. The difference between the two amounts thus obtained gives the additional amount to be received by the fund on account of this limitation.

The preceding discussion gives an account of the general procedure necessitated in the calculations by reason of the single feature of the contribution provisions. The fact that annuities are limited in amount, that the total contributions of teachers are limited and that annuities are based on 60% of an average instead of the final salary all served to make the calculations more complicated.

When the maximum limits had to be taken into account in connection with the procedure previously described, the work became somewhat complex and tedious.

In the retirement system proposed by the Pension and Retirement Fund Commission, the benefit and contribution provisions are so adjusted as to be readily valued.

#### AGE DISTRIBUTIONS USED AS A BASIS FOR VALUATION.

The age distributions of the teachers that were considered in the valuation follow. Tables 13 and 14 show the age distribution of all teachers in the state who are eligible to benefits under the 35-Year Service Pension Act. In giving them credit for service, prior service to the extent of ten years was included in accordance with the law governing the benefits of this system.

**Table 13—The Number and Salaries of Teachers Classified by Age.**  
**Men Teachers**

Age Group	Number	Total Salaries	Rural Districts		Towns or Cities of 5,000 Inhabitants and Upwards	
			Number	Salaries	Number	Salaries
18-22.....	67	\$ 56,860	39	\$ 31,340	28	\$ 25,520
23-27.....	220	248,210	80	82,350	140	165,860
28-32.....	354	510,700	95	120,280	259	390,420
33-37.....	328	550,200	80	105,300	248	444,900
38-42.....	262	506,730	75	115,710	187	391,020
43-47.....	215	440,070	61	84,420	154	355,650
48-52.....	142	304,300	46	68,180	96	236,120
53-57.....	105	240,180	27	38,760	78	201,420
58-62.....	56	125,100	26	35,780	30	89,320
63 and over.....	47	103,770	15	19,890	32	83,880
Total.....	1,796	\$3,086,120	544	\$702,010	1,252	\$2,384,110

Women Teachers						
18-22.....	1,965	\$1,182,520	822	\$473,600	1,143	\$ 708,920
23-27.....	4,401	3,166,980	1,438	964,780	2,963	2,202,200
28-32.....	2,767	2,481,930	660	514,050	2,107	1,967,880
33-37.....	1,773	1,797,490	344	272,490	1,429	1,525,000
38-42.....	1,422	1,501,260	241	199,430	1,181	1,301,830
43-47.....	945	1,036,380	175	139,620	770	896,760
48-52.....	654	727,240	106	83,640	548	643,600
53-57.....	395	452,850	66	53,600	329	399,250
58-62.....	181	209,100	35	26,090	146	183,010
63 and over.....	665	82,630	11	9,520	54	73,110
Total.....	14,568	\$12,638,380	3,898	\$2,736,820	10,670	\$9,901,560

Grand Total.....	16,364	\$15,724,500	4,442	\$3,438,830	11,922	\$12,285,670
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**Table 14—The Number and Salaries of Teachers Classified by Years of Service.**  
**Men Teachers**

Service Group	Number	Total	Rural	Districts	Towns or Cities of 5,000	
		Salaries		Salaries	Inhabitants and Upwards	
Less than 5 years.....	374	\$412,240	133	\$128,040	241	\$284,200
5 years and less than 10....	383	569,700	99	127,940	284	441,760
10 years and less than 15....	374	659,410	95	130,060	279	529,350
15 years and less than 20....	260	538,730	72	104,880	188	433,850
20 years and less than 25....	181	395,900	60	88,970	121	306,930
25 years and less than 30....	89	208,880	29	42,410	60	166,470
30 years and more.....	135	301,260	56	79,710	79	221,550
Total.....	1,796	\$3,086,120	544	\$702,010	1,252	\$2,384,110

Women Teachers						
Less than 5 years.....	4,885	\$3,214,540	1,832	\$1,138,650	3,053	\$2,075,890
5 years and less than 10....	3,531	2,928,160	977	721,280	2,554	2,206,880
10 years and less than 15....	2,310	2,260,160	477	376,770	1,833	1,883,390
15 years and less than 20....	1,517	1,602,150	263	212,320	1,254	1,389,830
20 years and less than 25....	1,004	1,098,720	150	123,040	854	975,680
25 years and less than 30....	633	709,720	88	72,920	545	636,800
30 years and more.....	688	824,930	111	91,840	577	733,090
Total.....	14,568	\$12,638,380	3,898	\$2,736,820	10,670	\$9,901,560

Grand Total.....	16,364	\$15,724,500	4,442	\$3,438,830	11,922	\$12,285,670
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In the valuation of the liabilities and contributions of the Teachers' Retirement Fund, the teachers were considered according to the classes described on page 2. Each class was further divided according to the contribu-

tion rates payable. The following tables give summaries of the groups considered. In these tables, only service in New Jersey has been taken into account.





**Table 18—Age Distribution, Number and Annuities of Teachers Retired Under the Teachers' Retirement Fund Who Receive No Retirement Allowances From the State 35-Year Service Pension Fund.**

Age	Men Teachers Number	Amount of Annuities	Women Teachers Number	Amount of Annuities
42.....			1	\$ 470
43.....				
44.....			1	650
45.....	1	\$ 280	1	300
46.....	1	640	6	3,030
47.....	1	650	5	2,070
48.....			3	1,100
49.....	1	310	5	2,320
50.....	1	570	6	2,620
51.....	1	320	2	1,300
52.....			6	2,680
53.....			7	3,190
54.....	1	450	6	2,770
55.....	1	560	6	2,170
56.....	1	320	5	2,530
57.....	3	1,200	6	2,290
58.....	2	810	8	3,670
59.....	2	930	7	2,880
60.....	4	1,500	12	4,270
61.....			12	4,100
62.....	2	1,300	6	2,360
63.....	1	650	6	2,440
64.....	3	1,900	3	860
65.....	2	840	4	1,580
66.....	2	1,000	4	1,620
67.....	2	900	5	1,370
68.....	2	500	8	2,840
69.....	1	650	7	2,420
70.....	1	250	6	2,640
71.....			2	890
72.....	2	1,090	6	1,820
73.....	1	250	3	1,150
74.....			1	320
75.....	1	250	1	270
76.....			2	590
77.....	1	650	3	820
78.....	3	750	2	500
79.....			3	1,290
80.....	1	250		
81.....				
82.....			1	250
83.....				
84.....			1	300
85.....			1	500
Total.....	45	\$19,770	180	\$71,240

**Table 19—Age Distribution, Number and Pensions of Teachers Retired Under the 35-Year Service Pension Fund Who Receive No Retirement Allowances From the Teachers' Retirement Fund.**

Age	Men Teachers Number	Amount of Pensions	Women Teachers Number	Amount of Pensions
53.....			1	\$1,200
54.....	1	\$ 460	1	300
55.....				
56.....			1	320
57.....	1	1,320	4	2,090
58.....	1	550	4	1,300
59.....	1	900	1	710
60.....	1	250	4	1,840
61.....				
62.....	1	650	2	750
63.....	1	1,150	1	740
64.....	1	650	1	300
65.....	1	240	4	2,450
66.....	1	3,040		
67.....	1	1,500	2	710
68.....			1	310
69.....	3	2,340	1	830
70.....			3	2,410
71.....	2	1,320	1	290
72.....				
73.....				
74.....				
75.....			2	1,350
76.....				
77.....				
78.....	1	920		
79.....			1	300
80.....				
81.....				
82.....	1	350		
83.....				
84.....				
85.....				
86.....				
87.....				
88.....				
89.....				
90.....				
91.....				
92.....				
93.....				
94.....	1	270		
Total.....	19	\$15,910	35	\$18,200

**VALUATION BALANCE SHEET**

The following valuation balance sheets show the liabilities involved in the operation of the retirement plans under consideration.

**Table 20—Teachers' Retirement Fund. Valuation of the Assets and Liabilities as of June 30, 1918.**

**LIABILITIES**

Present value of annuities to teachers now on the retired list:	
Men teachers.....	\$ 460,624
Women teachers.....	2,170,774
Total Benefits to present annuitants.....	\$ 2,631,398
Present value of annuities to be paid present active teachers who hereafter become incapacitated:	
Men teachers.....	\$ 1,590,496
Women teachers.....	14,839,771
Total Annuities to be paid to prospective annuitants among present active teachers.....	16,430,267

**ASSETS**

Funds in hand.....	\$ 485,000
Future contributions to be received from present teachers:	
Men teachers:	
1% contributors.....	\$ 2,461
2% contributors.....	599,619
2½% contributors.....	38,679
3% contributors.....	87,285
Women teachers:	
1% contributors.....	13,107
2% contributors.....	2,613,732
2½% contributors.....	244,770
3% contributors.....	154,764

Total future contributions from present teachers .....	3,754,417
Total assets .....	\$ 4,239,417
Deficiency .....	14,822,248
Grand Total.....	\$19,061,665

Grand Total.....\$19,061,665

Table 21—Teachers' 35 Year Service Pension Act. Valuation of the Assets and Liabilities as of June 30, 1918.

LIABILITIES		ASSETS	
The present value of pensions to present pensioners:		Contributions to be made by state.....	
Men teachers.....	\$ 463,478		\$23,129,212
Women teachers.....	1,677,371		
Total benefits to present pensioners.....			
			\$ 2,140,849
The present value of pensions to be paid present teachers who will receive benefits:			
Men teachers in cities.....	\$ 3,249,884		
Men teachers in rural districts	978,224		
Women teachers in cities.....	13,927,058		
Women teachers in rural districts	2,833,197		
Total benefits to present teachers.....			20,988,363
Grand Total.....			\$23,129,212

NOTE—Table 22 shown in Part I, page 12.

#### RATES OF CONTRIBUTION REQUIRED OF ENTRANTS UNDER THE EXISTING RETIREMENT AND PENSION SYSTEMS.

The preceding tables take into account only the liabilities involved in the operation of the plans for present teachers. In addition, for each new entrant, a certain percentage of salary should be contributed to provide for the liabilities added to the fund by new entrants. The following tables give these rates of contribution. Table 23 shows the rates that should be contributed by new members entering the Teachers' Retirement Fund, if they are to provide their proportionate share of the funds to be used for the benefit of those who become disabled. Table 24 gives the rates which would be required of the state, in behalf of teachers entering under the 35 Year Service Pension Act.

Table 23—Teachers' Retirement Fund. Rates of Contributions Which Would Be Sufficient If Paid By the Teacher From the Time the Teacher Enters the Service and Up to the Time of Retirement, to Meet the Cost of the Annuity.

AGE At Entrance Into the Service	MEN (Percentage of Salary)	WOMEN (Percentage of Salary)
20	2.12	4.50
21	2.10	4.51
22	2.07	4.53
23	2.06	4.55
24	2.04	4.56
25	2.02	4.57
26	2.01	4.53
27	1.99	4.50
28	1.99	4.46
29	1.98	4.43
30	1.99	4.42
31	2.03	4.40
32	2.06	4.35
33	2.10	4.29
34	2.13	4.19
35	2.18	4.04
36	2.26	4.18
37	2.34	4.35
38	2.43	4.50
39	2.53	4.68
40	2.66	4.83

Table 24—Teachers' 35 Year Service Pension. Rates of Contributions Which Would Be Sufficient, If Paid By the State From the Time the Teacher Enters the Service and Up to the Time of Retirement, to Meet the Cost of the Pension.

AGE At Entrance Into the Service	MEN (Percentage of Salary)	WOMEN (Percentage of Salary)
20	3.78	3.51
21	3.70	3.50
22	3.63	3.49
23	3.56	3.48
24	3.49	3.47
25	3.42	3.46
26	3.35	3.44
27	3.28	3.43
28	3.21	3.41
29	3.15	3.40
30	3.10	3.39
31	3.09	3.37
32	3.08	3.33
33	3.07	3.26
34	3.06	3.17
35	3.05	3.02
36	3.19	3.20
37	3.36	3.42
38	3.55	3.66
39	3.77	3.91
40	4.01	4.19

#### RATES OF CONTRIBUTION UNDER THE PROPOSED PLAN OF REORGANIZATION.

The rates of contribution required of teachers under the proposed plan are shown in Part I, page 4. The table gives not only the rates applicable to new entrants into the school system but shows the rate which would be payable by teachers now in the system who elect to enter the proposed system. A present teacher entering the proposed retirement system will pay the rate shown as of her age at the time she comes into the new system (not the rate applicable to the age at which she originally began teaching). The state will make up for the teacher the benefits which are allowable on account of her previous service.

The rates payable by the State to meet half of the cost of retirement allowances for new entrants and for future services of present teachers are shown in Part I, page 4. In addition the state must make special contributions to meet the total cost of allowances for past services of present teachers.

# PENSION REPORTS AND BULLETINS

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### *Preliminary Report of the Pension and Retirement Fund Commission*

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### *Supplementary Report of the Pension and Retirement Fund Commission*

State Research. Consecutive number 8, 1918. 16 p. Contains a digest of the bill for the retirement of employees of the State of New Jersey and an estimate of cost of the proposed system.

### *Introducing Order into Chaos*

Legislative Index, Vol. 15, No. 8, March 25, 1918. A review of what has been accomplished by six months of investigation of pension and retirement funds and what must be done in the future.

### *Teachers' Retirement Systems in New Jersey, Their Fallacies and Evolution*

State Research, Consecutive numbers 10 and 12. 1918. Report of the Bureau of State Research prepared by Paul Studensky, Supervisor of the Pension Staff. In 3 parts. 1918. 88 p. Introduction and Part I, Evolution of the Systems. Parts II and III, Present Condition and Practical Remedies. 40 p. Contains besides the discussion of the retirement situation in New Jersey, a chapter on the fundamental principles of a sound retirement system.

### *Introduction to the Report on the Teachers' Retirement Systems in New Jersey, Their Fallacies and Evolution*

A reprint. 16 p. pamphlet.

### *Police, Firemen's and Other Local Employees' Pension Systems in New Jersey*

State Research. Consecutive number 11, 1918. 24 p. Report of the Bureau of State Research prepared under supervision of Mr. Paul Studensky. Chapter on methods of financing and condition of the funds, by Mr. Alexander Gourvitch. Chapter on development of legislation and character of benefits provided, by Mr. R. K. Bissell.

### *A Sound Municipal Pension Act and Central Supervision of All Pension Funds in New Jersey*

'New Jersey,' Vol. VI, No. 1, October, 1918. 8 p. By Paul Studensky, Supervisor of the Pension Staff of the Bureau of State Research. An outline and discussion of the features of the bill proposed by the New Jersey Pension and Retirement Fund Commission.

### *Reorganization of New Jersey Teachers' Pension and Retirement Systems*

State Research. Consecutive No. 13, 1919. Report of the Pension and Retirement Fund Commission of the State of New Jersey. January, 1919, 24 pages. Part I. Present Systems and Their Reorganization—A critical and constructive study. Part II. Contents of Proposed Legislation—An act providing for the establishment of a new fund on an actuarial basis. Part III. Actuarial Estimates—Cost of existing systems and of proposed plan.



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